

CENTENNIAL
HISTORY
OF
POLK
COUNTY

T. M. McCall

HARLEY G. SWENSON
BOX 523
BROOKSTON, MINN. 56716

HARLEY G. SWENSON
801 THORNDALE AVENUE
CROOKSTON, MINN. 56716

FEB 14 1967

CENTENNIAL HISTORY OF POLK COUNTY

By
T. M. McCall
1961

Reproduction rights reserved by the Board of County Commissioners,
Polk County, Minnesota

PRINTED BY
MCGARRY PRINTING CO.
CROOKSTON, MINNESOTA

ACKNOWLEDGEMENTS

The publication of the CENTENNIAL HISTORY OF POLK COUNTY was made possible through an appropriation made by the Board of Commissioners of Polk county, as a part of the budget of funds set aside for the observance of the Polk County Centennial in 1958 and the gratuitous contributions of individuals of historical material.

Valuable assistance in the compiling of this history has been received from: the present incumbents of the county offices, librarians in Minneapolis, University of North Dakota, Crookston, Northwest School and the Polk County Historical Society.

Much of the compilation of statistical material on agricultural production in Polk County was made possible through direct assistance and loan of certain statistical material from Roy Bodin, Chief Statistician, State Federal Crop and Livestock Reporting Service, St. Paul, Minnesota and other census material.

Due credit should be given the newspapers of the county for their publication of historical material during the centennial year. A most noteworthy series of historical articles pertaining to the Statehood and County Centennials was published by the East Grand Forks Record. Anniversary historical booklets were published by the communities of Fosston, McIntosh and Winger, Crookston's Diamond Jubilee history of 1949 is also worthy of note.

The complete files of "Old Crossing Treaty" and "Old Crossing Memorial Park" records on file at the Polk County Historical Society Museum were an invaluable source of material for sections of this report. The "Old Crossing Treaty" file was compiled by the late Congressman C. G. Selvig and John Saugstad of Crookston.

T. M. McCall
Crookston, Minnesota
Professor Emeritus, Univ. of Minn.



Board of County Commissioners 1960-61 (Left to Right): Ordean Estenson, Climax (2nd District); Olaf Enerson, Fosston, (4th District, Chmn. '61); Martin Vanseth, Crookston, Auditor; Orris Moen, Fertile (1st District, Chmn. '60); Louis Geise, East Grand Forks (5th District); Elfon Hanson, Crookston, (3rd District).

INTRODUCTION

May 11, 1958, marked the centennial for Minnesota's admission to statehood. Later that same year, Polk County celebrated its centennial on July 27th. While Polk County and Statehood Centennial programs were observed throughout the year yet the first state-wide celebration of the Statehood Centennial was held in St. Paul on May 10, 1958, and Minneapolis May 11. Polk County, through its County Centennial Committee took part in the May 10th centennial program by entering the county float in the mammoth parade of some two-hundred and fifty floats. Other features of the May 10th celebration were the Centennial Train, with exhibits depicting the 100 years of progress in all phases of development in the state as a whole and a speaking program.

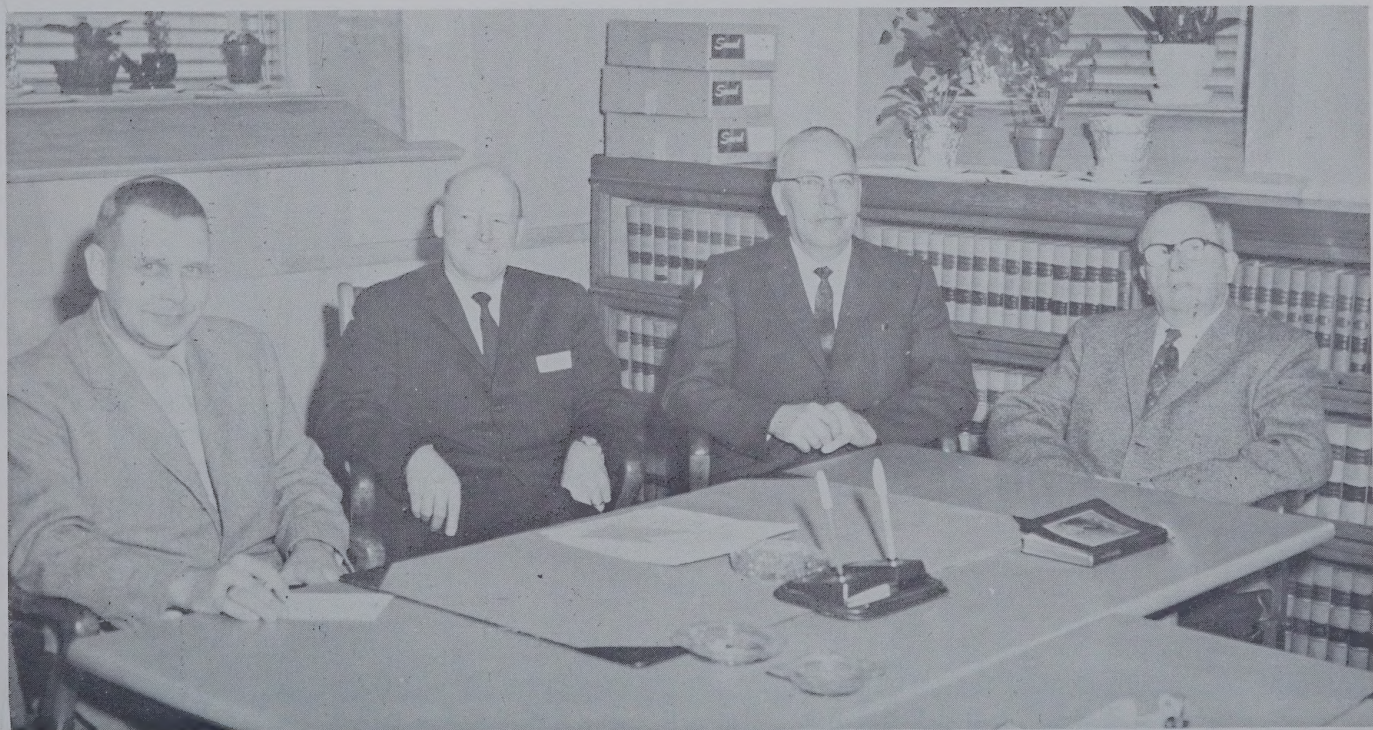
Inasmuch as the Polk County Centennial was being observed concurrently with the Statehood Centennial, the Polk County Board of County Commissioners set aside \$4,000.00 to be used, all or in part, for the proper observance of the centennial year. The Polk County Centennial Committee was selected to direct and co-ordinate the centennial observances throughout the county and bring the Polk County history up-to-date in the centennial year. T. M. McCall, former superintendent of the Northwest School and Experiment Station, now retired, was given the responsibility of selecting his own committee to work out the historical assignment. The report on the activities and accomplishments of the County Centennial Committee, which follows, was submitted by the chairman, Phillip Anderson, Judge of Probate for the county.

The committee on county history decided that the centennial history of Polk County should be a supplemental record of happenings of importance which occurred since the publication of the 1916 HISTORY AND BIOGRAPHY OF POLK COUNTY. The committee deemed it advisable to give an accurate chronological review of events of importance in the early history of the county, to note the progress in agricultural production and farm practices during the past four decades, and compile a list of elected and appointed officers serving the county since the time of the formation and organization of the county.

—T. M. McCall

ERRATA

Dates on Memorable Events fillers corrected to read
1823 Major Long Expedition to Pembina at end of Chap. 1
1872 Sept. Railroad reached Crookston. Chap. 4 page 3



Executive Board members Polk County Centennial Committee 1957-'58. (Left to Right): B. E. Youngquist, Vice. Pres., Supt. Northwest School and Experiment Station; P. A. Anderson, Pres., Judge of Probate; Oscar Larson, Treas., Banker, Erskine; T. M. McCall, Sec'y., Professor Emeritus, Crookston.

TABLE OF CONTENTS

Introduction

Chapter I

Polk County Prepares for State and County Centennial.

Chapter II

The Shrinking Land Area of Polk County. The Loss of Land to Other Counties.

Chapter III

Organization of the County in 1872—County Commissioner Districts.

Chapter IV

County Officers 1858-1960, County Extension Agents, County Extension Districts, District Judges Serving Polk County and Changing Judicial Districts.

Chapter V

Glacial Lake Agassiz and Shore Lines in Polk County.

Chapter VI

Early Explorers and Early Explorations of the Red River Valley.

Chapter VII

The Signing of the Old Crossing Treaty—Ceding of Indian Lands.

Chapter VIII

The Old Crossing Wayside Park—Possibilities for Improvement.

Chapter IX

Settlement and Early Settlers of Polk County by Judge J. E. Montague.

Chapter X

Population Trends in Polk County.

Chapter XI

Public Schools of Polk County—Evolutionary Changes in Schools of the County—Northwest School and Experiment Station.

Chapter XII

The Weather of Polk County.

Chapter XIII

Drainage Problems of the County.

Chapter XIV

Polk County Highways—Map.

Chapter XV

Meeting the Public Welfare Needs of Polk County by Emil Bagley.

Chapter XVI

Agricultural Fairs in Polk County—Fosston and Fertile County Fairs; Red River Valley Winter Shows.

Chapter XVII

Polk County as an Agricultural Empire—Its Soil and Soil Types.

Chapter XVIII

Soil Management Problems of the County.

Chapter XIX

The Fifty Pre-Centennial Years of Agricultural History in Polk County.

Chapter XX

Fifty Years of Progress in Crop Production in Polk County.

Chapter XXI

The Dividends of Potato Research in the Red River Valley—The Potato Research Center by Lyle Currie.

Chapter XXII

Sugar Beets as a Crop in the Red River Valley.

Chapter XXIII

Crops Production Tables and Crops for Polk County, 1910-1958.

Chapter XXIV

Livestock Production Tables, Prices, Trends in Cattle Feeding and Dairying.

Chapter XXV

The Number and Sizes of Farms in Polk County 1910-1958.

Chapter XXVI

Government Agricultural Production Control and Soil Conservation Programs in Polk County 1933-1960.

Chapter I

POLK COUNTY PREPARES FOR STATE AND COUNTY CENTENNIAL

Phillip Anderson, Judge of Probate, Chairman of Polk County Centennial Committee

"As a result of a meeting held in the summer of 1957, the following persons were named to make plans for the Polk County Statehood Centennial: Judge Phillip Anderson, chairman, Crookston, Minnesota; Dr. B. E. Youngquist, vice chairman, Crookston, Minnesota; T. M. McCall, secretary, Crookston, Minnesota; Oscar Larson, treasurer, Erskine, Minnesota. Other members were Hjalmer Erickson, Fertile; Franklin Vikan, Fosston; Almer Bakken, Fosston; William Kiewel, Crookston; Mrs. Elmer Bredlie, Eldred; Mrs. Charles Pester, Crookston; Henry Tweten, East Grand Forks; Clara Berg, Crookston. This committee met several times during the fall of 1957 to develop plans for Polk County's part in the statewide celebration of the centennial.

The first project of this committee was to arrange for financial support for the projects. This was adequately taken care of by an appropriation by the County Board of Commissioners.

The first centennial event in Polk County took place in February when a centennial pageant, under the direction of Fred Shrimpton, was presented at the Red River Valley Winter Shows. Several committees and organizations prepared historical episodes based on events which had taken place in Polk County during the past 100 years. The pageant was well done and well received by the capacity crowd in attendance as the several hundred persons who participated in the pageant recreated scenes in which their parents and grandparents had been the original actors and actresses.

The next event took place in East Grand Forks on May 8, 9 and 10 when this county honored the old settlers at a luncheon which featured the Honorable Edward J. Devitt, Federal District Judge and former resident of East Grand Forks, as speaker. This centennial program continued on May 9, with the crowning of the Centennial Days Queen, Janice Skovlem. On Saturday, May 10, which was the official Statehood Day in Minnesota, East Grand Forks staged the biggest parade ever assembled in that city. It was composed of so many units that it was necessary to have some units assemble across the river in Grand Forks, North Dakota. Your chairman had the honor of carrying, as a passenger in his 1927 Chevrolet sedan, the honored centennial pioneer, Jerry Driscoll, who celebrated his 100th birthday on April 19, 1958. Mr. Driscoll took an active interest in the parade and pointed out the many changes that had taken place during his residence in the East Grand Forks community.

Also on May 10, Polk County was represented in the Statehood Centennial Parade in Saint Paul. The Polk County Cen-

ennial Committee had arranged to enter a float in this parade and also arranged to have six young ladies representing several areas in Polk County on the float. This float was returned to Polk County and appeared in all of the other centennial celebrations in the county and in many parades in neighboring counties.

The East Grand Forks Record published a special Minnesota Centennial Edition which gives a very complete account of the centennial celebration in that area. The Record also published a series of weekly historical articles on state and county history.

The next official celebration took place at McIntosh in early June as the official "Thirteen Towns" celebration. Much preliminary work was done by a committee of local citizens in gathering historic information about the thirteen townships in this area and about the early homesteaders. This resulted in the publishing a book called **A SAGA OF THE THIRTEEN TOWNS**. The celebration was culminated with one of the best parades ever staged in this area. Special features of the parade included floats from most of the 13 townships of the area. The official Polk County float made its first appearance in the McIntosh parade. The float was managed by F. W. Zitka of Crookston, and it depicted all of the important resources of the county. Six attractive young ladies occupied seats of honor on the float. Your chairman took part in this parade driving his 1927 Chevrolet accompanied by Mrs. Anderson in an authentic gay nineties wardrobe.

The third celebration took place in the Fosston area with a combined celebration which included the 55th anniversary of the Fosston High School, the 50th anniversary of the Farmers State Bank, and the 75th anniversary of the village of Fosston and the Polk County Centennial all wrapped up in one package. Highlights of this celebration were a breakfast for the "Old Settlers" and reunions of the high school classes. Each class entered a float in the parade and here again the trusted Chevrolet carried the seven returning members of the Class of '25.

The next formal celebration scheduled for Crookston on July 4 had to be postponed three days because of heavy rains. The large historical parade arranged for July 4 was held on July 7. Business places arranged historical displays in their store windows and the celebration of the day was climaxed with a display of fireworks in the evening. Certificates were also awarded to several senior citizens who were unable to attend the award presentations made at Saint Paul in May.

The final Polk County Centennial event took place at the Fertile Fair when the Fair Association set aside one day for centennial activities. This included the historical parade and many other activities involving historical affairs."

1803 Louisiana Purchase.

1820 Major Long Expedition crossed Red Lake River probably near Fisher. Established northern boundary at 49th parallel.

Chapter II

THE SHRINKING LAND AREA OF POLK COUNTY — 1858-1958

Polk County in 1858 had the unique distinction of having two water-sheds draining in opposite directions. The Mississippi River, which formed the southeast boundary of the county from Lake Itasca to Cass Lake, emptied its water ultimately in the Gulf of Mexico, while the Red River of the North, which formed the western boundary of the county, emptied its water into Hudson Bay. After all of the changes in land area of the county had been made, the county today lies wholly in the Red River Valley.

In 1958 the land area of the county was less than one-half its original area. The land area of Polk County was established when Governor H. H. Sibley signed the bill creating the county on July 27, 1858. The land area for the county was set off from the territorial county of Pembina which included parts of north-western Minnesota and northeastern North Dakota. The law set up the southern boundary of Pembina as the northern boundary of Polk County. When the present counties north of Polk were established, the name Pembina was erased from the county map of Minnesota.

The boundaries of the county, as originally established, commenced at the southwest corner of Pembina county, opposite the mouth of the Turtle River and running up the Red River to the mouth of the Buffalo River at Georgetown; thence easterly up the Buffalo River along the northern boundary of the then named Breckenridge County and then along the northern boundary of Becker County to the southeastern extremity of Lake Itasca; then north and east up the Mississippi to its intersection of the county's eastern boundary line at the northeast extremity of Cass Lake; thence due north to the southern boundary of Pembina County, then due west to the point opposite the mouth of the Turtle River, the place of its beginning.

The first division of the county occurred in 1862, when a sizeable strip of land across the southern boundary was allotted to Clay County. The southern boundary of Polk and the northern boundary of Clay counties was established on a line between Townships 142 and 143.

The second division of Polk County occurred in 1866 when all of the land east, between the ranges 38 and 39, were set off to form a part of Beltrami County. (The land adjacent to the eastern boundary of the county was later separated from Beltrami County to form the present Clearwater County).

Some confusion occurred, regarding the northern boundary of Polk County, when Marshall County was established in 1879. The act establishing Marshall County had the dividing line between the two counties, between Townships 154 and 155N, while the original boundary, when Polk was set off from Pembina, was

fixed between Sections 6 and 7, Township 154N. This boundary was re-affirmed by the following legislature, and remains at the present northern county boundary. With the squaring up of the south and east boundaries the land area of the county was reduced to 4,450 square miles.

At the 1880-81 session of the Minnesota Legislature an act was passed creating the new county of Norman from the southern third of Polk County. The new southern boundary of Polk County and the northern boundary of Norman County was fixed on an east and west line between Townships 146 and 147. Norman County was allotted 1,432 square miles of land area and it in turn was later reduced when 572 square miles of the eastern part was set off to form Mahnomen County.

The last division of Polk County took place following the general election of 1896, when an irregular portion of the north central and northeast townships, totalling 1,039 square miles, was set off to form Red Lake County. The eastern boundary of the central section of Polk and the western boundary of Red Lake was established between Ranges 46W and 45W, beginning at the north boundary of the county and extending south to the northern boundary of Township 150, Range 45W (Gentilly Township); thence south along the eastern boundary of that township to an east and west line between Townships 149 and 150 to form the south boundary of Red Lake County. The southern boundary of Red Lake extends east to Range 41W, thence north and east bordering on Township 150, Range 40W (Chester Township); thence north and east following the west and northern boundaries of Township 152, Range 39W (Johnson Township); thence north along the eastern boundary of Polk County to the Marshall County line. (Red Lake County, too, suffered dismemberment when in 1910 its north half [approximate] was set off to form Pennington County.)

While the successful attempts to divide the land area have been duly documented, yet the history of Polk County would be incomplete unless a brief account of the unsuccessful attempts to divide the county were made in this report. The writer, upon his arrival in Polk County, was intrigued by the reports, many of them first hand from participants, of the unsuccessful attempts to divide the county. Argument for county division was not without justification. Before the general use of the automobile in the early twenties, a relay journey by team and railroad meant about a two-day trip to the county seat for residents in the northwestern and northeastern parts of the county.

The ambitions and aspirations of the citizens of the towns and villages to become county seats were the other driving forces working for county dismemberment. The law passed by the State Legislature in 1893, which permitted voters to decide at general elections on county division, added fuel to the fire of enthusiasm of factional groups for county division. Four sectional groups filed petitions for county divisions which were voted on in the general

election of 1894. The proposed divisions of the county with proposed county names and county seats were: west, Nash with East Grand Forks as county seat; north central, Red Lake with Red Lake Falls as county seat; east, the group favoring McIntosh as county seat submitted the name Columbia — those designating Fosston as the county seat submitted Nelson as the county name. This first attempt to slice up the county into three parts failed.

The following session of the legislature amended the County Division Law to permit voters to vote on only one division proposal at any one election. Similar petitions for county division were again placed before the voters in the general election of 1896. This election carried for Red Lake County. The last important county division election occurred in 1902 when petitioners sought to separate the eastern part from the parent county.

The late Charles Conger, a friend who then resided in McIntosh, gave an excellent report of the county division fight in the 1916 HISTORY AND BIOGRAPHY OF POLK COUNTY, entitled "The Rise and Fall of Columbia County". The four petitions voted on in the 1902 election were in agreement on land area, fixing the line of separation on the western boundaries of Garden, Woodside and Grove Park Townships. The groups were in disagreement, however, on county names and county seat towns. The proposed county names and county seats were: Nelson with Fosston, Columbia with McIntosh, North Star with Erskine, and Valley with Mentor. The petition for Columbia County carried the most yes votes and Governor Van Sant issued his proclamation declaring the proposition for the creation and organization of the Columbia County carried.

The new Columbia County proceeded to organize with the commissioners named in the petition as the organizing agency. The legality of the election was questioned, inasmuch as all petitions included the same land area. Polk County contested the election before the State Supreme Court. The Supreme Court handed down its decision on April 16, 1903, stating "That the pretended organization of the new county was invalid and of no effect and its pretended officials were ousted from the offices they claimed to hold". Considerable business had been transacted by the new county officials before the Supreme Court decision was handed down. The 1907 legislature however legalized in part many of the acts of the temporary organization pertaining primarily to estates, tax payments, marriage licenses and other minor matters. The final attempt to divide the county by the Nelson County advocates was decisively defeated in the 1908 election.

One interesting sidelight of legal significance was brought out in the final division of the county. The issue in controversy, between Polk and Red Lake counties, was whether or not Red Lake County should bear its share of the bonded indebtedness incurred while it was still a part of Polk County. The State Supreme Court reversed the decision of District Judge William Watts and ruled that Red Lake County should pay its share.

Chapter III

THE ORGANIZATION OF POLK COUNTY, COUNTY COMMISSIONERS AND COUNTY COMMISSIONER DISTRICTS

The actual organization of Polk County began with the appointment of three county commissioners by the governor of Minnesota on July 13, 1872, some fourteen years after the establishment of the county by the legislature. The three commissioners appointed to initiate county organization procedure were William Ross, Jacob Myers and E. A. Monison (the last named however apparently did not serve as commissioner). The first meeting of the two commissioners, William Ross and Jacob Myers, was held on October 21, 1872, with E. M. Walsh of Crookston acting as clerk. The commissioners decided to divide the county into three commissioner districts and set the regular election date in November as the time for the election of a full slate of county officers. After certifying the election of county officers to take office on January 1, 1873, the two commissioners met for a third meeting on December 8, 1872, and among other items of business appointed Richard Reis as County Superintendent of Schools.

At the first general election in the county on November 5, 1872, the three county commissioners elected were E. C. Davis, James Jenks and Lars Gordon. At the first meeting of the commissioners on January 7, 1873, E. C. Davis was elected as chairman.

The county remained in three commissioner districts until August 25, 1880, at which time the commissioners redistricted the county and divided it into five commissioner districts and established the boundary lines of the districts.

Prior to the time the state legislature declared the county legally organized (March 3, 1873), the legislature had re-established the county boundary lines on the south and east sides of the county. The southern boundary was established on what is now the southern boundaries of Norman and Mahnomen counties with the fragment south of that line to the Buffalo River attached to Clay County and the portion east of the present county line attached to Beltrami County, the southwestern portion of that county was later cut off to form our neighboring county, Clearwater.

The boundaries of the five original five commissioner districts are of historical interest for they include not only the present land area of Polk County but also the land areas of Red Lake, Pennington, Norman and Mahnomen counties.

Boundaries of the Five Commissioner Districts Established in 1880

FIRST DISTRICT—The boundary lines of the First Commissioners District shall be as follows: Commencing on the eastern

boundary line of Polk County on the townline between the Townships 144 and 145; thence running south 12 miles following said boundary line to the southeast corner of Polk County; thence running west to the Red River of the North, the southwestern corner of said county; thence running north along said Red River to the western point of the townline between Townships 145 and 146; thence running east on said town line to the range line between Ranges 46 and 47; thence running south following the said range line to the town line between Townships 144 and 145; thence running east following said township line to the eastern boundary line of Polk County, to the place of its beginning.

SECOND DISTRICT—The boundry lines of the Second Commissioners District shall be as follows: Commencing at the northeast corner of Township 152, Range 48; thence running south following the said range line between Ranges 47 and 48, eighteen miles to southeast corner of Township 149, Range 48; thence running east six miles following the town line between Townships 148 and 149 to the northeast corner of Township 148, Range 47; thence running south eighteen miles following the range line between Range 46 and Range 47 to the southeast corner of Township 146, Range 47; thence running west on the town line between Township 145 and Township 146 following the said town line to the Red River of the North; thence running north following the said river to the town line between Township 150 and Township 151; thence running east to the northeast corner of Township 150, Range 49; thence running north six miles on the range line between Range 48 and Range 49 to the northwest corner of Township 151, Range 48; thence running east six miles following the town line between Township 151 and Township 152 to the place of the beginning.

THIRD DISTRICT—The Third Commissioner District shall be composed of Townships 149, 150, 151 and 152, Range 47, and Townships 149, 150, 151 and 152, Range 46.

FOURTH DISTRICT—The boundaries of the Fourth Commissioners District shall be as follows: Commencing on the eastern boundary line of Polk County at the township line between Township 151 and Township 152; thence running south on the said boundary line to the south township line between Townships 144 and 145; thence running west following the said township line to the southwest corner of Township 145, Range 46; thence running north on the range line between 46 and 47, and following said line to the northwest corner of Township 148, Range 46; thence running east six miles on the town line between 148 and 149 to the northwest corner of Township 148, Range 45; thence running north on the range line and following said range line to the northwest corner of Township 152, Range 45; thence running east on the township line to the eastern boundary line of Polk County to the place of the beginning.

FIFTH DISTRICT (1880)—The boundary line of the Fifth

Commissioners District shall be as follows: Commencing at the northeast corner of Polk County and running south on the eastern boundary line of said Polk County and following said line to the town line between Township 151 and Township 152, Range 45; thence running north following the range line between Range 45 and Range 46 to the northwest corner of Township 152, Range 45; thence running west following the town line between Townships 152 and 153 to the southwest corner of Township 153, Range 47; thence running south six miles following the range line between Range 47 and Range 48 to the southeast corner of Township 152, Range 48; thence running west six miles and following the town line between Township 151 and Township 152 to the northeast corner of Township 151, Range 49; thence running south six miles to the southeast corner of Township 152, Range 49; thence running west on the town line between Township 150 and Township 151, and following said line to the Red River of the North; thence running north following said Red River of the North to the northwestern corner of Polk County; thence running east following the northern boundary line of said county to the northeast corner of Polk County to the place of beginning.

The County Board adjourned until September 29, 1880. J. Christianson, Clerk of the Board; E. C. Davis, Chairman of the County Board.

In common terms of geographical location, the five commissioner districts as outlined by the commissioners in 1880 are: District 1 — all of the present Norman and Mahnomen counties and townships in the south central section of the present county. District 2 comprised pretty largely the southwestern part of the county including the Fisher and Climax areas. District 3 — two tiers of townships north and south in the central part of the county included Crookston. District 4 — the east and northeast parts of the county. District 5 comprised what is now Red Lake and Pennington counties and townships west to the Red River of the North and south including East Grand Forks to the northern boundary of the second district.

The commissioner districts had to be redefined after the Norman County partition in 1881-82 and the Red Lake County partition in 1896-97. The general geographical district areas remaining in the county retained the commissioner district numbers with minor changes of townships to equalize the districts.

Townships Included in the Present Five Commissioner Districts

DISTRICT 1—Tilden, Grove Park, Badger, Godfrey, Woodside, Knute, King, Garfield, Garden and Winger.

DISTRICT 2—Bygland, Fisher, Lowell, Tynsid, Roome, Andover, Vineland, Hammond, Russia, Hubbard, Scandia and Reis.

DISTRICT 3—Parnell, Crookston, Gentilly, Fairfax, Kertsonville, Onstad and Liberty.

DISTRICT 4—Johnson, Chester, Gully, Lessor, Hill River, Eden, Brandsvold, Queen, Sletten, Rosebud and Columbia.

DISTRICT 5—Higdem, Sandsville, Farley, Brislet, Helgeland, Esther, Northland, Tabor, Angus, Brandt, Grand Forks, Sullivan, Keystone, Euclid, Belgium, Rhinehart, Huntsville, Nesbit and Fanny.



Polk County Officers 1960. (1st Row Left to Right): P. A. Anderson, Judge of Probate; Walter Aker, Register of Deeds; V. E. Watts, County Treasurer; Winnifred Laurent, Court Commissioner; Dr. H. E. Nelson, Coroner; F. H. Stadsvold, County Attorney. (2nd Row): Henry Gredvig, Supervisor Assessments; Adolph Stenseth, Superintendent of Schools; Martin Vanseth, Auditor; R. H. Espe, Clerk of Court; Carl Knutson, Sheriff. (Top Row): Emil Bagley, Welfare Director; Lilja Snyder, County Nurse; H. M. McFarlin, Veteran's Service Officer.

1874 Huntsville Township organized in county; Crookston, Vineland, Fisher and Red Lake Falls townships organized two years later.

1874 Grasshopper plagues hit western and southwestern Minnesota.

1873 Jan. 9th Teriffic blizzard hits southwestern Minnesota.

1875 Newly laid rails from Crookston to Euclid taken up to make railroad to Fishers Landing.

1876 Pierre Botineau settled in Polk County near Red Lake Falls.

County Commissioners of Polk County — 1872-1960

1872— Three commissioners appointed by the governor as organizing committee for county elections.
Appointees: William Ross, Jacob Myers, W. A. Monison, and E. M. Walsh, Clerk.

1872— November election for the three districts.
Elected: E. C. Davis, James Jahnks and Lars Gordon.

1879— 1st, W. D. Bailey; 2nd, A. Thoraldson; 3rd, Anthony Skreie.

1882— 1st, E. C. Davis; 2nd, John Frederick; 3rd, Isiah Gervais.

1884— Five Commissioner Districts.

District 1	District 2	District 3	District 4	District 5
Knute Nelson 1884	E. A. Bradish 1884	M. R. Brown 1884	Carl Kratzschmar 1884	Timothy Sullivan 1884
John Oppegaard 1893	Anton Lindem 1893	M. E. Kirsch 1893	C. P. Deniers Henry Norland 1897-1899	A. C. Rhinehart 1895-1897
Chas McCarty 1899-1905	G. W. Eastman 1900-1905	Rene Fortier 1899-1905	E. G. Ecklund 1903-1915	Hugh Thompson 1897-1899-1901
Jens Rindahl 1905-1909	Levi Steenerson 1905-1907	Ben Clements 1905-1913	Dreng Grundysen 1913-1931	T. T. Morken 1901-1905
Marius Christianson 1909-1923	E. E. Thoreson 1907-1923	J. D. McPhee 1913-1921	T. E. Kjolhaug 1931-1935	John Driscoll 1905-1909
Peder Ofstedahl 1923-1939	F. H. Ross 1923-1932	Theodore Garvik 1921-1939	Martin Strand 1935-1939	James Driscoll 1909-1949
O. N. Snustad 1939-1954	Adolph Skyberg 1932-1933-1959	William Eichhoff 1939-1949	T. E. Kjolhaug 1939-1947	Louis Geise 1949-
Peder Ofstedal 1954-	Ester Estenson 1959-	Ed. Ellinger 1949-1953	E. W. Thoreson 1947-1951	
	Ordean	Alfon Hanson 1953-	Olaf Enerson 1951-	

Additions and Corrections to list of County Commissioners and other County Officers.

COUNTY COMMISSIONERS

1873 W. C. Nash appointed to succeed James Jahnks resigned

1876-87 W. D. Bailey, Peter A. Paulson, E. C. Davis

1878-80 E. C. Davis, Anthony Skeie, H. Thoraldson

1880 E. C. Davis, H. Thoraldson, Alex Running

1881-83 E. C. Davis, H. Thoraldson, Ole Estenson

1883 First change in commissioner districts, increasing the number from three to five. The first commissioners for the new districts were:

1st Knute Nelson

2nd E. A. Bradish

3rd M. R. Brown

4th Isiah Gervais

5th A. A. Higdem

Other additions

District 1 Oris Moen 1956 to-date

District 4 Carl Bakken, acting May '46 to Jan. 1, '47

District 5 Louis Geise 1947 to-date

COURT COMMISSIONER

Winnifred Laurent 1955 to-date

Judge of Probate

S. Fjoser
1878
R. J. Montague
1882-1890
C. O. Christianson
1890-1894
C. M. Benson
1894-1902
O. A. Thoreson
1902-1906
T. T. Morken
1906-1912
A. L. Hovland
1912-1922
Eric O. Hagen
1922-1926
Myrtle Hovland
1926-1934
Nels Ben Hansen
1934-1946
Phillip A. Anderson
1947 todate

County Superintendent of Schools

Jacob Reis
1872-1876
Christopher Steenerson
1876-1879
V. P. Carruth
1880-1887
E. F. Elliot
1887-1889
Thomas Casey
1889-1891
E. J. Grefthen
1891-1893
Andrew Lommen
1893-1895
O. McCrillis
1895-1897
I. I. Kassa
1897-1900
Thomas Casey
1901-1908
N. A. Thorson
1909-1922
Ingeborg Espeseth
Ass't Freda Stehn
1923-1926
I. S. Hov
Ass't H. Sorvig
1927-1934
H. E. Sorvig
Ass't P. A. Anderson
1935-1955
Olga Sorvig
1955-1958
Adolph Stenseth
1959 todate

Chapter IV

POLK COUNTY OFFICERS — 1872-1960

Auditor

E. M. Walsh
1872-1875
Al Yvernault
1875-1878
John Christianson
1879-1881
P. J. McGuire
1881-1890
C. U. Webster
1890-1894
John Gleason
1895-1900
Nels Hoffard
1903-1908
Henry J. Welte
1908-1954
Martin L. Vanseth
8/1/54-

Treasurer

William Ross
1872
John Christianson
1878
O. H. Lucken
1888
J. T. Beaudry
1893-1895
M. G. Peterson
1899-1901
M. G. Peterson
1901-1903
W. L. Vannet
1904-1909
George L. Flaten
1910-1931
Lewis G. Hancock
1932 to 4/1/38
Died in office
Pualine Lindberg
App't. April, 1938
Elected 42-12/31/51
Robert Risch
1/1/52 to 59
Mrs. V. E. Watts app't
1959 to date.

Register of Deeds

Jacob Myers
1/1/72-12/31/74

G. S. Spendley
1/1/75-12/31/84
John Paterson
1/1/85-12/31/86
Andrew Eiken
1/1/87-10/15/91
John Locken
10/16/91-12/31/92
John Amundson
1/1/93-12/31/94
Albert Wickstrom
1895-12/31/97
John S. Dyer
1/1/98-12/31/00
O. A. Christianson
1901-12/31/04
J. H. Stair
1/1/05-12/31/08
Theo. A. Thompson
1/1/09-12/31/18
G. T. Hagen
1/1/18-
Died in office
Theo. A. Thompson
App't. 1918-1922
John Saugstad
1/1/23-12/31/30
Bertha B. Henre
1/1/31-12/31/42
Walter B. Acker
1/1/43 to date

Sheriff

T. Jenkins
1873
A. R. Russel
1878-1880
B. F. Zarracher
1880-1882
W. F. Wickey
1883-1887
N. O. Paulsrud
1889
Arne Grundysen
1893-1895
Thomas Lawrence
1895-1901
Ed. S. Sullivan
1901-1905
Louis Gonyea
1905-1907

Orin Daniels
1907-1913
E. F. Kelly
1913-1919
O. K. Bolstad
1919-1923
Anton Nelson
1923-1925
Ira Haaven
1925-1935
Julius Spokely
1935-1943
Torkel Knutson
1943-1951
Vernon Espe
1951-1955
Carl Knutson
1955 to date

Clerk of Court

Richard Hussey
1872-1874
J. H. Barb
1874-1877
Bernard Sampson
1878
R. Reynolds
1879
Christopher Steener-
son, 1880-1882
Arne Higdem
1882
Thomas Shapleigh
1882-1886
E. M. Walsh
1887-1891
Nels Maus
1891-1895
John Vig
1895-1898
E. E. Lommen
1899-1903
Wm. Lancot
1905-1915
Hans L. Wagge
1915-1923
Minne E. Boe
1923-1935
Raymond Espe
1935-1960

County Attorney

W. C. Woodruff
1872
John McLean
1878
Halvor Steenerson
1880
William Watts
1882-1888
D. P. Williams
1888
A. R. Holsten
1893-1895
A. R. Holsten
1901
W. E. Rowe
1901-1905
James H. Maybury
1905-1909
Eric O. Hagen
1909-1915
G. A. Youngquist
1915-1919
J. E. Montague
1919-1931
George Hagen
1931-1935
F. H. Stadvold
1935 to date

Surveyor

R. E. Hussey
1873-1878
Wm. Arnold
1878-1881
John Hunt
1881-1883
C. L. Brainard
1883-1884

A. L. Hamery
1885-1887
W. F. Arnold
1889-1891
A. L. Hamery
1891-1903
Alex Gray
1903-1905
George Ralph
1905-1909
Steener Steenerson
1909-1913
Johannes E. Beim
1913-1915
Leslie Raff
1915-1917
Steener Stenerson
1917-1953
Lloyd Ofstedal
1954 to date

Coroner

G. D. Wilkins
1873-1878
L. Beaupre
1878-1881
Dr. M. Watts
1881-1885
N. Van Dyke
1885-1887
H. Shepard
1887-1891
A. McEachron
1891-1896
G. H. Palmer
1897-1899
Ole R. Miller
1900-1903
G. S. Chesterman
1903-1909

Nels Stenshoel
1909-1913
Dr. H. E. Nelson
1913 to date

Court Commissioner

W. C. Woodruff
1873
W. C. Nash
H. E. Cooke
1879-1881
John Leo
1882-1885
D. E. Hattleslad
1885-1891
Wm. Averill
1891-1895
John S. Dwyer
1895-1897
George Palmer
1897-1905
J. A. Hendricks
1905-1907
John McLean,
1907-1909
Aaron Youngquist
1909-1915
A. J. Johnson
1915-1917
L. S. Miller
1917-1919
O. K. Berget
1919-1923
L. S. Miller
1923-1931
Hans L. Waage
1931-1951
Martin Vanseth
1951- to 8/1/54

1876 First of several Bonanza Farms in Red River Valley, the Dalrymple Farm in North Dakota (26,000 acres), north of Fargo, later Dayton and Keystone farms in Polk County.

1877 April 26th, Day of Prayer to halt grasshopper plague which started in 1874. Weather turned cold killing most of the hoppers.

1879 U. S. Land Office moved to Crookston from Detroit (Detroit Lakes, Minn.)

1881 State Capitol burned.

1887 Northern Pacific Railroad reached East Grand Forks.

East and West Polk County Agricultural Extension Districts

It was found soon after the inauguration of county agricultural work in Polk County during the period of World War I that the county was too large for effective service from one county or agricultural agent. The land area of 1,979 square miles, comprising 1,266,560 acres, naturally divided itself into two topographical areas divided more or less sharply by the old beaches of the prehistoric Lake Agassiz.

The agricultural agencies responsible for the agricultural extension program and the Board of County Commissioners agreed that the prairies of the western part of the county with the clay soil types presented different farm management problems than the semi-wooded productive soil areas of the eastern part of the county. As a result of this decision, a line of separation was drawn along the eastern boundaries of Gentilly, Kertsonville, Onstad and Liberty Townships dividing the county into East and West Polk for the agricultural extension and other farm programs. This division of the county for agricultural extension activities was made in 1928 with headquarters for the agricultural extension work for the eastern part of the county set up at McIntosh. The office for West Polk remained at Crookston.

1825 Great Flood on Red River.

1850-'51 Great floods on Minnesota River.

1858 May 11th Minnesota becomes a state.

1858 July 20th Polk County established by act of legislature.

1863 October 3rd Old Crossing Treaty signed at Huot.

1870 W. C. Nash settled at East Grand Forks, had served area previously.

1871 September, Northern Pacific R. R. reached Moorhead from Duluth.

1871 October, Great Northern Railway reached Breckenridge.

1872 First group settlement in Polk County at Climax. Later in '72-'73-'74 settlements of Irish north of Climax, Norwegians near Bygland and Scotch at Mallory.

1872 First Scotch Fife wheat introduced into Valley; lasted 35 to 40 years.

1872 Sept. 4th, First steamboat reached Crookston; some water traffic to Crookston until railroad reached Fisher in 1875.

1873 Sept. Railroad reached Crookston.

COUNTY AGRICULTURAL AGENTS, ASSISTANTS, HOME AND CLUB AGENTS

— for —

West and East Polk County — 1914-1960

WEST POLK COUNTY

County Agent

A. R. Knutson
11/1/14-3/31/15
R. H. Van Scoik
3/1/15-8/31/19
L. M. Bond
9/22/19-5/30/21
L. A. Churchill
6/15/21-9/15/21
G. U. Kappel
6/1/26-8/31/29
A. W. Aamodt
1/16/28-6/15/31
O. K. Engene
6/16/31-3/15/32
Carl Ash
3/15/32 to date

Assistant

County Agent

E. A. Larson
4/1/18-7/1/18
G. H. Atwood
3/16/19-6/23/19

W. A. Peters

2/1/19-2/29/19

Russel Morgan

11/1/29-11/30/29

Clement Chase

4/1/30-3/15/31

Ret. May 15, 1933

Ernest Palmer

1/30/36-2/28/37

W. O. Woodman

6/15/36-2/26/37

Stanley Doten

4/1/37-7/15/37

Kenneth Hanks

7/16/37-12/31/37

Burton Kreitlow

11/1/41-1/4/42

Osgood Magnusson

4/10/44-5/8/44

Richard B. Aakre

6/6/46-9/28/46

Stanley Thorson

10/3/49-4/25/50

Raymond M. Mitress

6/12/50-10/31/50

Jerome E. Specht

8/16/51-2/29/52

Glen R. Chambers

12/6/54-2/15/57

Marlin O. Johnson

4/6/57 to date

Club Agent

Florence O. Olson

1/1/51-1/1/54

Home Agent

Shirley M. Ramstad

7/1/54-8/15/57

Marlys T. Rifi

10/1/59 to date

Club Agents

Beva Rae Fegley

6/2/58-9/5/58

Audrey C. Holte

6/1/59-9/10/59

EAST POLK COUNTY

County Agent

Fred Idtse
6/1/28-11/30/29
Russel Morgan
12/1/29-2/15/32
Ronald McCamus
2/16/32-11/6/32
Rudolph Stolon
11/7/32-8/29/45
Jewel M. Roningen
8/1/45-2/18/48
Harley S. Shurson
2/16/48 to date

Home Agents

Anne E. Fuglie
4/17/49-4/14/51
E. Joyce MacKinnon
8/6/51-7/18/53
Wilma Merle Stevens
7/20/53-5/31/57
Wanda E. Warnes
Acting from
5/4/49-9/12/59
Barbara J. Mains
10/1/59 to date

Assistant

Home Agents

Mary Jean Rasmusson
5/2/55-7/10/55
Marie H. Matiewsky
6/4/56-8/5/56
Ethel Stordahl
3/31/49-9/30/49
Millicent Erickson
6/20/57-9/14/57
E. Blanche Sorenson
6/16/58-9/6/58
Carol H. Lehrer
6/1/60 to date

COUNTY SUPERVISOR OF ASSESSMENTS

The office of County Supervisor of Assessments was created by the 1947 State Legislature of Minnesota. It was optional with each county as to whether they should appoint a County Assessor or a Supervisor of Assessments.

The County Board of Polk County appointed me as Supervisor of Assessments in the fall of 1947. The first year that property was assessed under this plan was in 1948.

The duties of the office are: the general supervision of the

various local assessors in the county, to gather information for the County Board of Equalization, and to assist said board in the work of equalizing the valuations between townships, villages and cities. Other duties consist of: setting up schedules of values for livestock, farm machinery, household furniture, making land maps and comparing land values in the different townships, and classifying the land as to Grade A, B, etc., with the aid of the local assessors.

Since this office has been created, there has been a better equalization of values than before the system was inaugurated, and over the state it has created more consistency in the forming of the tax structure.

I have held this position as Supervisor of Assessments of Polk County since the creation of the office. However, my retirement from this position will be effective January 1, 1960. My successor, Mr. Henry Gredvig, has been appointed by the County Board.

December 15, 1959
Crookston, Minnesota

FRANK H. LOHN
Supervisor 1947-1960

JUDICIAL DISTRICTS INCLUDING POLK COUNTY AND JUDGES SERVING THE DISTRICTS 1858-1958

FOURTH DISTRICT (July 20, 1858 - July 31, 1866)

JUDGES:

James Hall—Little Falls, Morrison County, May 24, 1858.
Edward O. Hamlin—St. Cloud, Stearns County, October 1, 1858.

SEVENTH DISTRICT (July 31, 1866 - March 5, 1874)

JUDGE:

James M. McKelvey—St. Cloud, Stearns County, August 1, 1866.
July 31, attached to Crow Wing; March 8, 1867, attached to Morrison; March 2, 1871, attached to Becker County.

ELEVENTH DISTRICT (March 5, 1874 - March 8, 1877)

JUDGE:

O. P. Stearns—Duluth, St. Louis County, April 23, 1874.
Polk County still attached to Becker for judicial purposes.
March 11, 1876, Polk County attached to Clay County for judicial purposes.
February 27, 1879, Polk County was detached from Clay County and granted a general term of District Court.

FOURTEENTH DISTRICT

(March 8, 1887)

JUDGES (Single Judge):

Ira B. Mills—Moorhead, Clay County, March 8, 1887 to January 2, 1893.

Frank Ives—Crookston, Polk County, January 2, 1893 to January 3, 1899.

William Watts—Crookston, Polk County, January 3, 1899 to March 26, 1934.

James E. Montague—Crookston, Polk County, March 27, 1934-1949.

*Andrew Grindeland—Warren, Marshall County, March 24, 1903 to 1930.

*Julius J. Olson—Warren, Marshall County, December 1, 1930-

*Michael A. Brattland—Ada, Norman County, March, 1933-1941.

*Oscar Knutson—Warren, Marshall County, Jan. 2, 1941-1948.

Paul C. Lundgren—Thief River Falls, Pennington County, Jan. 1, 1948 to date.

J. H. Sylvestre—Crookston, Polk County, November 1949 to date.

** Second Judge Assigned to District.*

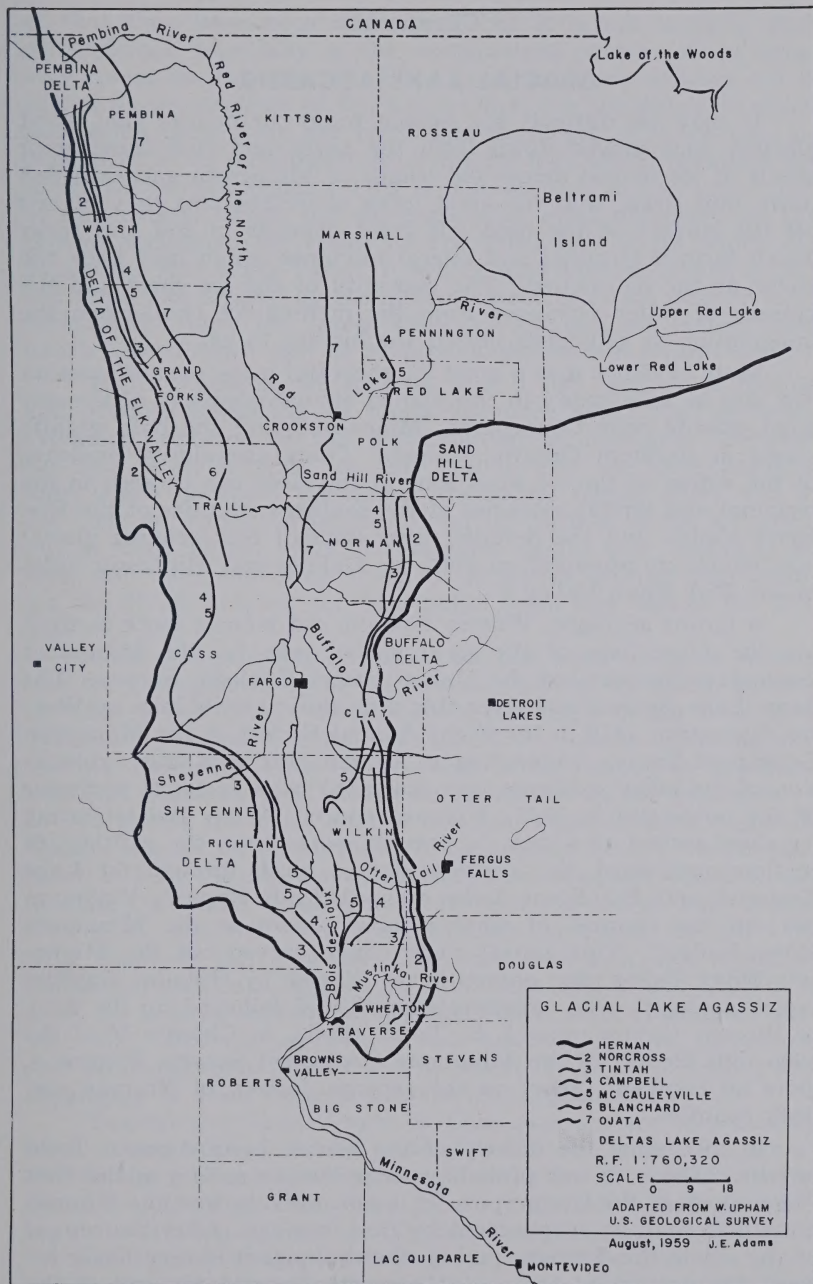
* Minnesota Judicial Districts. Prepared by Minnesota Historical Records Survey Division of Community Service Program Works Progress Administration. January 1942. pp. 14, 21, 22, 26, 57, 68 69 and 71.

**Recent changes in Judicial District Numbers affecting Polk County:*

By action of the Special Session of the State Legislature in 1957, the number of the Judicial Districts of the state was reduced from 19 to 14, effective on July 1 of that year. The eight Red River Valley counties, including Polk, comprising the 14th District made up the new 7th District.

The last change made by the State Legislature in re-numbering the Judicial Districts became effective on July 1, 1959 when the number of districts was reduced to 10. The Seventh District, of which Polk County was a part, was re-numbered the Ninth Judicial District with nine counties added to comprise an area of 17 counties. To serve the enlarged Ninth Judicial District, four additional judges were added to the roster of the two incumbents, Judges Paul Lundgren and J. H. Sylvestre. The new Judges assigned to our Ninth District include: J. J. Hadler, International Falls; Arnold C. Forbes, Bemidji; John T. Gilarneault, Aitkin and James F. Murphy, Grand Rapids.

*Data since 1941 compiled from Minnesota Legislative Manuals. Data 1858 to 1941.



Taken from the Minnesota
Archeological Newsletter of
March 1960.

Chapter V

GLACIAL LAKE AGASSIZ

It may be difficult for people today to believe that great glaciers once moved down from the north and that these great sheets of ice moved across the length of Minnesota and extended down into Iowa; that the great lobes of ice sheet as they planed off the surface of the land left great deposits of soil and rocks which formed terminal and lateral moraines which held back the water as the ice melted. The enormity of the ice sheet and the volume of water produced from the melting ice challenges the imagination as geologists unfold the history to us.

Mute evidence that a great ice sheet did move over Minnesota can still be seen today in the planed-off outcroppings of the original granite near Clementson, Minnesota, and the bald granite ridges in southern Ontario, Canada. Other cumulative evidence of the action of the ice sheet lobe in this area can be seen in the terminal and lateral moraines of the southern counties of the Red River Valley and the definite shore lines of the receding glacial lake which are apparent on both the Dakota and Minnesota sides of the Red River Valley.

A famed geologist, Warren Upham, did pioneer work in tracing the shore lines of the great glacial lake for the Minnesota Geological Survey and the United States Geologic Survey. The name Lake Agassiz was given this prehistoric glacial lake by Warren Upham in 1879 in the Eight Annual Report of the Minnesota Geological Survey. According to Upham, the first true explanation of the lakes' existence was presented by a geologist professor of the university in 1872. Upham reports, "While the retreating ice sheet served as a dam to prevent water from the melting ice to flow northward, the overflow did go south through the Lake Traverse and Big Stone Lake area, through Brown's Valley to cut out the channel of what is now known as the Minnesota River Valley." This glacial river, which carved out the Minnesota River Valley, was named River Warren by Upham. Another famed geologist, who collaborated with and followed up the work of Warren Upham, was J. E. Todd. Todd, in Chapter V of the 1896-1898 Report of the Minnesota Geological Survey, Volume 4, gives an excellent report on the geologic history of Norman and Polk counties.

In discussing the history of the glacial Lake Agassiz, Todd reports, "The area was probably under the sea as late as the Fort Pierre epoch of the Cretaceous. It is not unlikely that the Silurian rocks also may be encountered by deep borings. After the retreat of the sea in the Tertiary period, the drainage was very likely toward the north and east as at present. Toward the end of the Tertiary, the drainage toward the north very likely became less abrupt because of the continental elevations toward the north and east. So far as is yet known, no buried channels of the streams

at that time have been discovered, but it is not unlikely that deep borings, especially in the southeastern portion of the area, may reveal the existence of such. The Quaternary History—it is agreed by all students of the subject that the ice which occupied this region came from the north and northeast. The ice was independent in its movements from the ice lobe which occupied the upper Mississippi region. This is true at least in the latter part of the history, which left its impression most distinctly on the present surface of the country. The great lobe of ice which occupied the Red River Valley, it will be remembered, moved southward and was divided by the eastern coteau in to the western lobe, which crept down the James River Valley, and the eastern lobe, which passed down part of Minnesota Valley into central Iowa.”

“In its recession, we suppose that it had periods of halting and possibly advancing for short distances, which has, as before explained, resulted in the accumulation of moraines. Between the Red River lobe, as we may call it, and the Lake Superior lobe, which occupied the upper Mississippi region, there was at one time no distinct separation upon the surface of the ice sheet, but as they melted away their margins would very naturally be more and more separated along the height of land or ridge forming the divide between the Mississippi basin and that of the Red River.”

While it is probably irrelevant for this report to delve further into the geologic history of the area as reported by Todd, Upham and others, yet Todd's description of the origin of the Wild Rice moraine in Norman County, the Hill River moraine extending into Chester Township, Polk County, and deltas formed by the Sand Hill and Buffalo rivers, are items of interest to the geologist.

In tracing the shore lines or beaches of glacial Lake Agassiz, Upham found that the elevation of the highest crest of the Herman beach in Polk County was 1,173 feet above sea level, which would indicate that water to a depth of 300 feet stood over what is now Crookston, and that area from Mallory west was covered with more than 300 feet of water. The most comprehensive report of the beaches of Lake Agassiz in Minnesota and North Dakota is given by Warren Upham Monograph XXV, U. S. Geological Survey, 1895. For the purposes of this historical review, quotations and summarizations from Upham's report in the 1916 History and Biography of Polk County will suffice. Upham states:

“Several successive levels of Lake Agassiz are recorded by distinct and approximately parallel beaches of sand and gravel due to the gradual lowering of the outlet by the erosion of the channel at Brown's Valley and these are named in their descending order, Herman, Norcross, Tintah, Campbell and McCaulville beaches, because they pass through or near these towns.”

Summarizing briefly Warren Upham's descriptions of the various beaches we note the following: Herman, the highest beach, with elevations of 1,178 to 1,185 feet, crossed the south line of the county in Garfield Township near its midpoint; thence north

to a point west of Maple Lake, then east northeast to the south side of Red and Rainy lakes. There appears to be three levels of Herman beaches passing through Godfrey and southeast part of Tilden townships where they curve to the end of Maple Lake to Mentor and Erskine, onward northeast and east to Trail and Gully.

The Norcross beach, at an elevation of 1,092 feet, is evident about three and three-fourths miles east of Benoit. About two and one-half miles east of Benoit three small ridges, at an elevation of 1,062 to 1,069 feet, can be noted which represent the Tintah beach. The Campbell beach crosses Polk County, beginning in Section 34, Liberty Township, at an elevation of 1,010 feet. It runs due north through Liberty, Onstad and the southern two-thirds of Kertsonville. The Campbell shore line is almost continuously a terrace of ten to thirty feet in as many rods (commonly known as the Sand Ridge). Numerous boulders, remaining from the wave erosion, are strewn on a narrow belt below the terrace. The Campbell beach takes a north, northeast course from Section 9 in Kertsonville to the southwest corner of Red Lake Falls Township.

The McCauleyville beach lies a few miles to the west of the Campbell beach and runs parallel to it. Other low, less defined beaches are, according to Todd's map of Polk County, the Ojatta and Gladstone. The former beach enters the county some seven miles east of Neilsville and extends north through Scandia, Hammon, and over eastern Lowell and Fanny north to some two miles west of Euclid, northward crossing the Great Northern tracks some two and one-half miles north, paralleling the tracks one to two miles east until it crosses the Marshall County line. The other less defined beach starts in the vicinity of Tabor and extends due north to the north boundary of the county. This last named beach is referred to as the last stage of Lake Agassiz.

1895 Northwest Experiment Station established at Crookston.

1895 Big floods on the Red and Red Lake Rivers.

1900 Present Court House dedicated.

1906 Northwest School of Agriculture established in connection with the Northwest Experiment Station.

1908-'09-'10 Some grasshopper damage from local species not Migratory locusts.

1910 Bad fall forest fires, Warroad, Beaudette and Spooner areas.

1918 October, Bad grass and brush fires in Polk County. Terrific forest fires, Deer River, Carlton and Duluth areas; loss of many lives.

Chapter VI

EARLY EXPLORERS AND EXPLORATIONS OF THE RED RIVER VALLEY

It is not the purpose of this Centennial History of Polk County to trace or describe the journeys and explorations of all of the early explorers visiting Minnesota and the Red River Valley, nor verify the claims of their respective governments for title to the lands of which the Red River Valley is a part. Much of that information is available to students in text books of American history, books published on the work and accomplishments of early explorers, journals and records in the Library of Congress and in the archives of many state and county historical societies. It will be the purpose of the treatise to list chronologically, explorers, explorations and changes of titles of ownership of importance to the Red River Valley and Polk County.

The date the first white man visited the Red River Valley probably never will be known. Many people would like to believe, the writer included, that Norsemen entered the valley by way of Hudson Bay and the Red River before Columbus discovered America. While the authenticity of the Runestone record has been discredited, yet the finding of old Norse type anchor stones in lakes of the area has never been explained. Following the explorations of Radisson and Groseilliers in eastern Minnesota, 1658-1660, France sent officers to the region and in 1671 claimed the whole area south to the Gulf of Mexico. England, previous to this time, granted the Hudson Bay Company all of the lands draining into Hudson Bay, which caused a conflict of interests between the two countries. The brief interlude in which Spain claimed title to the lands had no appreciable effect on the bitterness of feeling between the English and French fur traders in the area. The title to the lands west of the Mississippi was transferred back to France under Napoleon. Irritation between the two countries over boundary lines ended when the United States gained title to this area as a part of the Louisiana Purchase in 1803. The boundary line between English and United States lands was not definitely established until 1823 by the scientists and surveyors of the Stephen Long Expedition.

The first authentic records of white men crossing the Red River Valley was in 1732. This record and subsequent explorations are quoted from Report No. 1126, House of Representatives, 71st Congress, 2nd Session, from the Committee on the Library:

"On the outskirts of this valley along its northeastern confines as early as the year 1732, the year in which George Washington was born, French traders and missionaries established Fort St. Charles on the shores of the Lake of the Woods. In 1763 LaVerendrye crossed this fertile valley near the location of the proposed monument (Old Crossing Treaty site) on a journey to the present location of Minot, North Dakota. In 1798, David Thompson, an English explorer, passed through the Red River Valley during the early winter and wrote about Christmas Eve festivities in camp among Indians.

"The first settlers migrated south from Fort Garry, now called Winnipeg, in 1812. They were a part of the Lord Selkirk colonization party and made their homes at almost the exact spot where the forty-ninth parallel of latitude crosses the Red River.

"In 1823, President Monroe issued orders to Major Stephen H. Long to explore this valley. Splendidly equipped and having in his party noted scientists and surveyors, Major Long secured authentic information, which later was issued in book form. The historian of the party wrote glowingly of the fertile soil, the agreeable climate and the abundance of game and fish. In fertility of the soil he likened it to the valley of the Nile and prophesized that it would produce food to feed millions when opened for white settlement.

"The record shows that Major Long forded the Red Lake River at a point not far west of the 'Old Crossing' which early became a historic spot in this section of the United States. Proceeding northward, he encountered the settlers of the Selkirk company at Pembina. The official surveyor established the exact location of the forty-ninth parallel of latitude, which had been agreed upon as the northern boundary, and ascertained that all but six families living in this settlement had built their homes on the American side of the line and were therefore privileged to claim the protection of the Stars and Stripes and be citizens of the United States Government. It is recorded there was great rejoicing and that a magnificent feast was held in honor of the visitors.

"Count Geacomo Constantino Beltrami, who accompanied Major Long on his expedition to Pembina in 1823, left that party there and travelled southeasterly with two Chippewa guides to find the source of the Mississippi. He evidently went down Thief River to its junction with the Red Lake River, where his guides left him. He hired another guide and went up the river to Red Lakes, then down to Lake Julia, across to Lake Bemidji, down the Mississippi. The inaccuracies of his reports are apparent when he stated 'Lake Julia was the most northern source of the Mississippi and that the Red Lakes were the most southern source of the Red River.'

"Another explorer, who was first to explore what was later to become the southeastern boundary of the original Polk County, was Henry R. Schoolcraft. Schoolcraft, a mineralogist, accompanied Governor Lewis Cass to northern Minnesota in 1830 to get the Chippewa and Sioux Indians to cease their warfare. Regarding the success of this mission, Schoolcraft stated, 'Much good tobacco and eloquence was wasted on Indian tribes.' On May 3, 1832, Schoolcraft was issued an order authorizing him to make an expedition on the upper Mississippi. His party was well equipped with a surgeon to vaccinate Indians against smallpox and a clergyman in addition to the regular corps of helpers. He reached Cass Lake on July 10, 1832, and first saw the headwaters lake (which he named Itasca) on July 13, 1832. Some later explorers have contended that the small Elk Lake which connects to Lake Itasca may be the source of the Mississippi; however, authorities agree that Lake Itasca is the source of the great Mississippi and that the honor for its discovery belongs to Henry R. Schoolcraft."

It has been the purpose of this report to include only a report of the early explorers who left reliable records of their visitations of the area. Many other early explorers evidently visited some parts of the Red River Valley who lacked a knowledge of the geographical areas they visited. Fur traders did move up the Red River to points at or near Grand Forks more than 100 years ago. They were a migratory lot; however, one of their number did remain to be the first or one of the first white settlers in Polk County. He was William Nash, settled in '69 at East Grand Forks.

Chapter VII

SIGNING OF THE "OLD CROSSING" TREATY WITH THE CHIPPEWA INDIANS

It appears from the early records that informal attempts had been made to reach an agreement with the Red Lake and Pembina bands of Chippewa Indians regarding navigation rights on the Red River of the North prior to 1862. In that year, however, the first formal attempt was made to negotiate a treaty between these northern bands of Chippewas and the United States government. The date for these negotiations was set for the summer of 1862 at the "Old Crossing" of the Red Lake River on the Red River Trail west of the later developed village of Fisher. The Indians met at the appointed place. The meeting, however, was never held, due to the failure of the U. S. Commissioners to arrive. The failure of this meeting provoked a situation which seriously weakened the bargaining power of the Chippewas at the treaty meeting the following year. Due to a long, futile wait for the U. S. Commissioners in 1862, the Indians exhausted their food supplies and (in modern terms) "hi-jacked" an ox-cart train of supplies in the Grand Forks area. It was purported also that Indians were exacting toll from the boats plying on the Red River. These depredations entered prominently into the treaty negotiations.

The other point of interest about the first scheduled meeting is the identification of the "Old Crossing". Evidently, the earliest references to the "Old Crossing" referred to the crossing of the Red Lake River on the Red River Trail west of Fisher. All later allusions to the "Old Crossing" beginning to 1863, refer to the ford on the Red Lake River where the Pembina Trail crossed the river at the present day Huot.

The man appointed by the federal government to represent the United States as Treaty Commissioner, to deal with the Chippewa Indians, was Alexander Ramsay, the first territorial governor of Minnesota. The U. S. agent representing the Indians was Ashley C. Morrill. These men were appointed by the United States Commissioner of Indian Affairs. The other parties negotiating in the treaty were the chiefs, head men and warriors of the Red Lake and Pembina bands of the Chippewa Indians.

In checking over the instructions given to Ramsey by the Commissioner of Indian Affairs on July 24, 1863, I found the following: "The main object of the negotiations should be to secure to the people of the United States the uninterrupted navigation of the Red River of the North. To effect this object, it is important to secure a cession of the land on each side of the river as far as desirable. *I would not advise the purchase of all the lands to which the Indian title is yet unextinguished*, as the settlement by whites will not be likely to extend to that remote region of our country for many years. In this matter, however, you must exercise your own discretion. Should the Indians prefer to cede

all of their territory except such a Reservation as may be necessary for their own use, it may be better to purchase it, if the cession can be obtained on reasonable terms." Ramsey's instructions were not to base the consideration "on the imaginary value of the land, or the acquisition of a right of way, but upon the present necessities of the weaker and their improvement in the future." The ultimate decision within the guide of that instruction was left to Ramsey.

While Ramsey was also instructed to deal with and pacify the Mississippi Chippewas, who were dissatisfied with their treaty of March 11, 1863, it appears that nothing was done on this matter.

For a log of Ramsey's trip from Saint Paul to the treaty site and for a vivid description of what took place at the time of the treaty signing I shall quote from that eminent Minnesota historian, Dr. Theodore C. Blegen, Dean of the Graduate School University of Minnesota. Dean Blegen, Superintendent of the Minnesota State Historical Society in 1933, gave the Dedicatory Address at the "Old Crossing" Treaty Memorial on June 25 of that year. He said in part, "Fortunately the Minnesota Historical Society has been collecting and preserving historical records ever since 1849, and I think you would be interested to know that among the thousands of historical treasures is a little notebook in which Alexander Ramsey recorded in his own hand, day by day, his journey to this spot in 1863 and the negotiations which took place. With this old diary and some other early records, I want to place before you something of that scene from 1863.

"Ramsey requested General Sibley for an escort of two companies of mounted men and a section of mountain howitzers before he set out from St. Paul September 2, 1863, for the treaty site; and in his official report he states that Sibley, then returning from his expedition against the Sioux, promptly obliged him. All supplies for the trip, including oats for the horses and mules and food for the Indians to be met at the Old Crossing, had to be transported with the Ramsey party. On September 3, Ramsey wrote the Indian Commissioner from St. Cloud that the sum of six thousand dollars allowed for the expense of completing the treaty would not be sufficient, and that he would have to draw several thousands more. In Ramsey's diary we can follow the expedition westward to Fort Abercrombie and then northward and northeastward. Its members went on foot, in wagons and on horseback, and they were accompanied by livestock (beef on the hoof) for use on the way and at the meeting ground. Ramsey had a carriage for his own use, but occasionally he would take to the saddle.

"The diary records such items as the crossing of a small river a bridge had to be built and time was required to guide the heavy teams and wagons down the steep banks and over the stream. One night a prairie fire threatened the camp, and a large party of men were detailed to build a counter-fire for protection. The entry in Ramsey's diary for September 21, 1863,

reads, 'Bearing northeast we marched over a level prairie and reached the crossing at 10:00 a.m., some Indians coarsing over the plains to meet us.'

"The objectives of the federal government were first, peaceful relations and a right-of-way for transporting goods and passengers through the Indian country, but it is clear that what was primarily wanted was the opening of a vast area of fertile land to settlement by means of outright cession. With Ashley C. Morrill, agent for the Chippewa, Ramsey had been designated as commissioner to negotiate with the Red Lake and Pembina Chippewa bands. When Ramsey reached the Crossing, the Red Lake Indians were there awaiting him, with Monsomo (Moose Dung), Medawagonin (He That Is Spoken To), Little Rock, Broken Arm and Leading Feather as their head. Morrill was also there, having come by way of Leech and Red Lakes.

"The next day the Pembina Indians arrived with Red Bear of Pembina and Little Chief of Turtle Mountain at their head. To Ramsey's chagrin, Charles Bottineau, who escorted the Pembina Indians to the conference, had brought not only chiefs and head men as he had been directed, but also almost the whole body of Indians and half-breeds. He later submitted a bill for eighteen hundred dollars for supplies on the journey. So instead of a small group of leaders assembled on the grounds, they were thronged with more than sixteen hundred Indians and half-breeds. As we try to picture the scene in our imaginations, we may make out the figures of some noted pioneers who wove in and out among these throngs. One is Pierre Bottineau, who well deserves to be known as the Kit Carson of the Northwest, and another is J. A. Wheelock, one of the giants of Minnesota journalism in the frontier era.

"The council met at two o'clock on the afternoon of September 23 in a large tent, Ramsey and his staff occupying one side and the Indians the other. Speeches were given a few sentences at a time, an interpreter translating as they went along. Ramsey opened the deliberation with an explanation of what the government wanted. He told the Indians that where they then saw one cart and one steamboat, in twenty years they would see a hundred, and he predicted that it would not be long before the railroad with the 'fire wagons' would reach the Northwest. Change and progress, he declared, could no more be stopped than one could stop the sun from setting. And so, picturing the terrible-ness of the white invasion, he offered to purchase the right of way, or, if the Indians desired, their lands. The Indians asked to be permitted to consider until the following day before making their reply.

"When the chiefs met Ramsey the next day, they declined his offer to purchase a right-of-way, as indeed he expected them to do, and they requested more time in which to consider the outright sale of their lands. The Ramsey diary details the delays and difficulties of treaty making. Then as now the Indians were

skilled orators. Among those who represented the Indians was Little Rock of Red Lake, who spoke with genuine eloquence and great astuteness. 'The Master of Life,' he said in one of his speeches, 'gave us the river and the water thereof to drink, and the woods and the roads we depend on for subsistence . . . the Master of Life gave it to us for an inheritance, and gave us the animals for food and clothing.' The conferences were protracted and seemingly futile and Ramsey finally records that on September 29 he gave a 'severe dressing down' to the Pembina half-breeds. He then began to hold meetings with the chiefs and head men alone, having abandoned the hope of action through councils. On October 1 he wrote in his diary, 'Today it looked as if all hope of success was gone.'

"Other records indicate that Ramsey and his party packed up and started to leave. The chiefs and head men in a hurried meeting without Chief Medawagonin agreed to sign the treaty."

Dean Blegen continued in his reference to Ramsey by saying, "His pessimism was unwarranted, however, for the treaty was signed on the next day, and Ramsey did not exaggerate when he jotted these words in his diary: 'The Treaty under all circumstances and with the little help I had was a triumph.' A final distribution of goods and provisions took place on October 3, and the next day Ramsey's party started on its homeward journey. A twenty-year annuity of \$20,000 together with other expenditures set up a total of a little more than a half million dollars as the purchase price. The treaty provided for the transfer of an area of several million acres—an empire in the valley of fertility.

"Medawagonin refused to sign the treaty. Of this powerful Red Lake chief, Bishop Whipple, who knew him well, wrote, 'He was a man six feet, four inches in height, straight as an arrow, with flashing eyes, frank open countenance, and as dignified in bearing as one of kingly race.' Bishop Whipple had advised Medawagonin to demand houses, cattle, schools, and agricultural implements in the treaty council and when this demand was not satisfied Medawagonin refused to sign. During that winter Medawagonin walked 150 miles to visit the Bishop and to ask his help in obtaining better terms. A few weeks later the bishop went to Washington with the Red Lake chiefs, and on April 12, 1864, he finally secured a revised treaty that was the same in terms of land transfer as the treaty of 1863, but included some of the things the bishop demanded."

The foregoing excerpts from the dedicatory address of Dean Blegen give an insight in the making of a treaty of great significance to Polk County and the Red River Valley.

The terms of the 1863 Treaty at the "Old Crossing" were listed under five articles—Article I quoted in full; summaries given for others:

ARTICLE I—The peace and friendship now existing between the United States and the Red Lake and Pembina bands of Chippewa Indians shall be perpetual.

Article 2 outlined the boundaries of the lands ceded to the United States which included the whole of the drainage basin of the Red River of the North in the states of Minnesota and North Dakota, excepting lands in the basin of the Red Lakes retained for the Red Lake Reservation. The eastern boundary of the ceded lands extended from the international boundary south from the Lake of the Woods to the headwaters of Thief River, down that stream to the Red Lake River. This line formed the western boundary of the Red Lake Reservation. The ceded area embraced some 9,799,940 acres, described by metes and bounds. In addition to the reservation lands retained by the Red Lake band, the Pembina band of Chippewas retained a tract of country claimed by them embracing some of the favorite buffalo pastures north and northwest of Devil's Lake. To save space and avoid repetition, the other Articles of the Treaty signed in 1863 can best be stated in the Treaty Revision approved by the Senate on April 12, 1864. The Treaty was altered mainly with respect to considerations as follows:

Cash of Equivalent Considerations—

1. Modification: Instead of \$20,000 per year for 20 years, the United States was to pay \$15,000 per year, \$10,000 to the Red Lake band and \$5,000 to the Pembina band "during the pleasure of the President" (Art. 2).
2. New provision: The United States to expend \$12,000 per year for fifteen years for materials, \$8,000 for the Red Lake band and \$4,000 for the Pembina band (Art. 3).
3. New provisions: The United States to furnish annually for 15 years (Arts. 4, 5):
 - one blacksmith
 - one physician
 - one miller
 - one farmer
 - \$1,500 worth of blacksmith materials
 - \$1,000 for carpentering
 - a sawmill with run of millstones attached
4. Modification: Instead of \$100,000 for damages and debts and debts after an audit by a commission and the chiefs with residue added to the annuity funds:
 - a. To the chiefs of said bands except May-dwa-gwa, no-in (anglicized Medawagonin) — \$20,000.
 - b. To Chief May-dwa-gwa-no-in — \$5,000.Payment of claims and debts with no provision for any residue and with the agent and chiefs to audit the claims and debts — \$75,000.
5. For a road from "Leech Lake to Red Lake" — \$5,000.

Charges Against Annuities—

6. Not to exceed \$150 per year per chief.
7. \$500 for each chief as first payment.

Other Considerations—

8. Amnesty for past offences.
9. Modifications: Instead of 160 acres to each male half-breed or "mixed bloods" scrip was to issue to all "mixed bloods" in lieu of all future claims for annuities.
10. 640 acres "near the mouth of Thief River" for the Chief Moose Dung (Mons-o-mo).

The total recited consideration in the Treaty of 1863 as modified by the supplemental Treaty of 1864 was \$612,000.

The final draft of the "Old Crossing" Treaty signed at Washington had the signatures (marks) of sixteen members of the Red Lake and Pembina bands of Chippewa Indians. The list of signers for the Indians include three chiefs, four headmen and six warriors from the Red Lake band, and one chief, one headman and one warrior from the Pembina band. For the records, the proper and common names of the chiefs are given while only the common names of the headmen and warriors will be listed.

FROM THE RED LAKE BAND: Principal Chief May-dwa-gwa-no-in (He That Is Spoken To), Chiefs Mons-o-mo (Moose Dung), and Ase-e-ne-wub (Little Rock). Headmen: Leading Feather, Dropping Wind, Little Shoe, and White Hair. Warriors: The Boy, Straight Bird, He That Makes the Ground Tremble, with no interpretation—Osh-shay-o-sick and Kay-tush-ke-wub-e-tung, and Bad Boy.

FROM THE PEMBINA BAND: Principal Chief Mis-co-muk-quah (Red Bear), Headman Equal Sky, and Warrior Wants Feathers.

The Treaty was signed by President Abraham Lincoln and Commissioners Clark W. Thompson and Ashley C. Morrill. The names of interpreters of significance to the area of the "Old Crossing" Treaty were Pierre Bottineau and Benjamin Dalbec, and at Washington, D. H. Beaulieu, J. G. Morrison and Peter Roy for the Indians, and T. A. Waner, Chas. E. Garden and Charles Bottineau for the United States.

Now in 1960, some ninety years after the "Old Crossing" Treaty was signed, it is difficult to correctly appraise all of the factors which brought about the conference and treaty. A study of the diaries, records and reports of the commissioners involved and others, forces one to the following conclusions:

1. The United States Government
 - a. Recognized the title rights of the two bands of Chippewa Indians.
 - b. Wanted free access and use of the Red River for navigation.
 - c. Wanted the fertile lands of the Red River Valley opened for settlement.
 - d. Was willing to bargain with the Indians for transportation and land title rights.
 - e. Took the initiative to attain objectives.
2.
 - a. There was no urgency on the part of the Red Lake and Pembina bands of Chippewas to dispose of title rights.
 - b. Their association with the explorers and white settlers had been peaceful.
 - c. The one blot on their record occurred after the failure of the 1862 "Old Crossing Conference", due to failure of the Commissioners to arrive and the subsequent seizure of food and provisions from an ox-cart train.
3. That fear of reprisal for the looting of the caravan and the presence of two companies of armed soldiers with a complement of howitzers expedited the signing of the treaty.
4. That the lack of knowledge of land title values on the part of the Chippewas caused them to settle for a low figure.



Old Crossing Treaty Memorial. A life size figure in bronze of a Chippewa Indian holding the Pipe of Peace, placed in the Old Crossing Wayside Memorial Park at Huot, Red Lake County, Minnesota.

Chapter VIII

THE "OLD CROSSING" WAYSIDE MEMORIAL PARK

It seems difficult for those of us living in Polk County in 1958 to understand why the early settlers living near the "Old Crossing" in Polk and Red Lake counties did not appreciate the significance and historic importance of the "Old Crossing" on the Red Lake River. Perhaps the county separation battle, which ended in 1896 with the formation of Red Lake County out of the north central part of Polk County, diverted interest from this historic spot. Two famous pioneers, who participated indirectly in the signing of the "Old Crossing" Treaty, resided in Polk County until their lands became a part of the new county, Red Lake. The most famous and honored of the two pioneers was Pierre Bottineau, who was a noted scout and guide for the area and served as an interpreter for the Chippewa Indians at the signing of the treaty. Pierre Bottineau lived on his farm west of Red Lake Falls until his death on July 26, 1895. He was buried in a nearby cemetery. The other pioneer was Benjamin Dalbec, an escort at the treaty, who lived in that county until his passing in 1928.

While many people in the two counties had a passive interest in the "Old Crossing", yet it remained for John Saugstad of Crookston to take the leadership in the recognition of this historic spot. As state senator in 1913, he was responsible for having a marker placed at the "Old Crossing." Governor A. O. Eberhard took part in the ceremonies of this first historic recognition of the site. From that early date, John Saugstad was the torch bearer for those interested in the regional significance of this historic crossing on the Pembina Trail.

In the late twenties, a number of business leaders from the Red Lake Falls and Crookston area became interested in developing a park at the treaty site. Congressman C. G. Selvig, former Superintendent of the Northwest School and Experiment Station, his successor, Dr. A. A. Dowell, together with Sam Hunt and V. M. Higginbotham, and others from Red Lake Falls, gave added enthusiasm to the park project. Congressman C. G. Selvig introduced and secured the passage of H. R. 5271 in April, 1930, for an appropriation of \$5,000 for the erection of a suitable memorial at the "Old Crossing." The Board of County Commissioners of Red Lake County purchased the 8.8 acres at the west bank of the "Old Crossing" from the Huot family. The Red River Valley Development Association pledged care and maintenance of the memorial site until its status as a state park was established. Farmers of the community, businessmen from Red Lake Falls, and committees from the Kiwanis and Rotary Service clubs of Crookston worked under the direction of the writer in cleaning up the dead trees and brush and the restoration of the "Old Trail" through the park. The memorial decided upon was the bronze life size figure of a Chippewa Indian holding the pipe of peace.

A noted sculptor, Carl G. Mose of Washington, D. C., was commissioned to cast the approved design of the Chippewa Indian in bronze. Enough of the \$5,000 was left over to cover the costs involved in making and placing the bronze marker plaques on suitable granite boulders, and one large granite slab left conveniently nearby the prehistoric glaciers.

The dedication of the "Old Crossing Treaty Memorial" was held in the park on June 25, 1933. A crowd of more than 3,000 persons was present for the dedicatory exercises with special recognition being given to the local pioneers and the Chippewa chiefs and headmen from Red Lake, White Earth, Ball Club and Ponsford. Congressman C. G. Selvig, President of the Polk County Historical Society, presided at the meeting. The memorial was presented to the state on behalf of the United States government by Mark L. Burns, Superintendent of the Consolidated Chippewa Agency of Cass Lake, Minnesota. Superintendent Burns also served as fiscal officer in the expenditure of the Congressional appropriation for the memorial.

The acceptance of the memorial in behalf of the Chippewa Indians was made by Edward L. Rogers, member of the Chippewa tribe and County Attorney of Walker, Minnesota, and in behalf of North Dakota by Joseph Rabinovich, Department Commander of the American Legion, Grand Forks. Greetings in behalf of the pioneers were extended by Chas. E. Boughton, Sr., Red Lake Falls, and Martin O'Brien of Crookston. The Address of Acceptance and Dedication for the State of Minnesota was given by Dr. Theodore C. Blegen, Superintendent of the Minnesota State Historical Society. The music for the program was presented by the Crookston Municipal Band.

The Old Crossing Memorial Park plaque contains the following inscription: *Within the area comprising this park, in the fall of 1863, negotiations were conducted with the Pembina and Red Lake bands of Chippewa Indians by which they ceded to the United States about three million acres of land in northwestern Minnesota and northeastern Dakota. This cession made possible the settlement of the Red River Valley. Here stood the great Cottonwood tree which served the early settlers as a post office and here also the ox-cart trains, which carried furs and supplies between St. Paul and Pembina by way of St. Cloud or Crow Wing, forded the Red Lake River. The monument, representing a Chippewa Indian with the pipe of peace, by the sculptor Carl C. Mose, was erected by the United States under the terms of a bill introduced by Congressman Conrad G. Selvig of Crookston.*

The land in this park was donated to the State of Minnesota, in 1931, by action of the Board of County Commissioners of Red Lake County—Sam E. Hunt, Frank P. Grenier, Nels L. Roseen, E. E. Hill and Ole O. Lee.

The site was improved under the direction of a committee consisting of V. M. Higginbotham, John Saugstad and Thomas M. McCall.

In the late thirties, citizens of the Crookston and Red Lake Falls communities acquired a little more than 100 acres of land which included the portion of the Pembina Trail which led to the east bank of the "Old Crossing" and the tract of land on both sides of the river north of the bridge (a tract which had been held by the Northern States Power Company at a site for a power dam). Some preliminary work had been done in planning for this dam before 1920. What appeared to be several hundred-wagon-loads of native granite boulders, which had been purchased from nearby farmers, were dumped over the hill for rip-rapping the banks. It occurred to many interested in this purchase that the time might come when a dam could be built on the site, not for the generation of power but, as a check dam for flood control and to conserve spring run-offs for domestic and industrial uses for the towns downstream dependent on the Red Lake River. Such a reservoir could be a valuable asset to a state park. The land was given to the State of Minnesota and included in the park area.

Because of the highway and river cutting the park area into four parts, the State Park Service classified the two divided portions of the land on the west bank of the river as the "Old Crossing Wayside Park". To date, funds set aside from the State Department of Public Parks have not been adequate to maintain the whole 8.8 acres of the memorial site. A good picnic area around the Post Office Tree and Bronze Memorial is available for small gatherings. There are great potential possibilities in the development of a beautiful and historic park. The portion of the park on the east bank of the river, south of the present highway through which the Pembina Trail descends from the ridge to the river, is a natural amphitheatre. This tract, of approximately fifteen acres, would require considerable work to get the trees and brush removed from the trail and above the river bank. This park, if it is to be properly developed, remains a challenge not only to the State Park Service but to Polk and Red Lake counties.

1918 November 11, Armistice Day World War I.

1940 November 11, Terrific blizzard and cold wave extending from Canada through the Red River Valley south and south-eastward through Minnesota, Iowa and Nebraska. One of the most widespread storms in recent history causing great losses to livestock, turkeys and great damage to trees and shrubs.

1941 March 15th, 9:10 p. m. Terrific blizzard swept down from north striking entire Red River Valley on south and east. Comparable to Jan. 9th storm in 1873 in S. W. Minnesota. Tornado-like winds, heavy snow with temperatures near and below zero. Seventy lives lost in area—several in Crookston area.

1941 December 7th, Japanese attack on Pearl Harbor involving the United States in World War II.

THE SETTLEMENT AND EARLY SETTLERS OF POLK COUNTY

Judge J. E. Montague

The earliest recorded and authentic settlement of any kind in the territory established at Polk County was the trading post of Baptiste Cadotte, located at the confluence of the Clearwater and Red Lake Rivers, near Red Lake Falls. In his diary, David Thompson tells of going from Roy's post on the Dakota side of the Red River just west of Argyle, to Cadotte's post in 1798, and from thence to Red Lake, Turtle and Cass lakes, and down the Mississippi. Thompson was a great explorer, and the greatest cartographer of his time in the west country.

In 1800, Alexander Henry was placed in charge of the Northwest Fur Company's operation in the Red River district, and in that year established his trading post at Pembina with a view to cultivating the Indian patronage. In the fall of that year he made a trip south along the river, on the Minnesota side, to at least as far south as present Climax and Neilsville, and he gives a very good description of the Red Lake River, and the Sand Hill and Wild Rice rivers. Later he made a trip down the Snake River, about where Warren now is, and then across country to the old Cadotte Post, then abandoned, and then up the river to about the present site of Thief River Falls. His description of the country was very accurate. Henry was in charge at Pembina until 1808, and established trading posts at Grand Forks and near the present Climax. We have seen it frequently stated that LaVerendrye established a trading post at Grand Forks in the 1730's, but there is no basis for such a claim. His own narrative does not mention it, but there is some reason to believe that he did establish one north of Red Lake, as well as a post at the mouth of the Roseau River.

In 1823 a government expedition under Major Stephen H. Long travelled from Fort Snelling to Pembina, following the old Pembina Trail which went from near Climax to the crossing of the Red Lake River, a short distance from the present Fisher. He was accompanied by the Italian traveller, Beltrami, who left the expedition at Pembina and struck off to the southeast across country until he struck the Red Lake River, which he followed to Red Lake, and thence south to Lake Julia, then through lakes Bemidji and Cass and down the Mississippi.

In 1836 Martin McLeod, afterwards a prominent member of the legislature and author of the bill establishing our public school system, came from the south to Red Lake, and then across country to Pembina.

In 1840, Joe Rolette went to Pembina to take charge of the post there, and in 1843 was joined there by Norman Kittson. It was they who established the Red River Trail that crosses the

Red Lake River at Huot, and goes south through Polk County on the ridges east of Crookston, and it was they who really established the Red River cart traffic.

In 1857, the great Canadian scientist, Hind, made a trip from Pembina to St. Paul, and gives an interesting and accurate account of his journey. He followed the Red River Trail crossing the river at Huot, and thence down through Polk County. He is very accurate in his measurement of the distances between the different streams he crossed, and he tells of meeting the mail-carrier, who was then 15 days out from Crow Wing (near the present Brainerd). He met two trains of Red River carts, one 21 and the other 19 days out from St. Paul. He states that the trail used in the winter time turned to the east in Marshall County, going to the present Thief River Falls, and then down the river and lakes to St. Paul.

In 1857, Joe Rolette and Norman Kittson platted a town-site at the point the trail crossed the Red Lake River, at the present Huot, and named it Douglas. When the legislature passed the act establishing Polk County, Douglas was named the county seat. It is doubtful whether there ever was anything there except a trading post, for when Joseph Wheelock accompanied Governor Ramsey, when the "Old Crossing" Treaty was made, he wrote: "On the opposite or northern side once flourished a magnificent city, founded by Joe Rolette and others in 1857 and known as Douglas. The ruins are still visible — a single monumental chimney of mud and sticks."

The first settler in what is now Polk County undoubtedly was W. C. Nash, who settled at what is now East Grand Forks in 1869. He came here as a mail carrier, contractor and Indian trader—not with the intention of making it his home, though it turned out that he spent the rest of a fairly long life there.

Early in 1871, Levi Steenerson went north from Lac Que Parle County and took a job with the Hudson's Bay Company, driving teams with supplies between Georgetown and Frog Point (opposite Climax on the Dakota side of the river). That spring and summer being dry, Frog Point was the southern terminus of river transportation on the Red River. On one of his trips in the latter part of May, he swam across the river at Frog Point and selected a homestead along the Sand Hill River, and went back to work. He wrote to his brother Knute urging that he come there and select land also. So in June, 1871, there arrived Ole Estenson and family, Peter O. and Esten Estenson, Peter Satermoe, Ole Jvening, Tollef Ose, Knute Steenerson, Henry and Paul Simon, Gullek and Salva Spokely, Tollef Tollefson, Jorgen Knutson, John Bremseth, Peter Jacobson and John Sundet, all of whom settled on the east side of the Red River from a point just north of where Climax now is to a point south of the present Neilsville, the settlement extending for about twelve miles north and south. The land was not surveyed except by townships, and they agreed among themselves as to the boundaries of their claims.

They constituted two distinct groups: those south of the Sand Hill River were acquaintances from Houston County, most of them having come from Telemarken, Norway; those north were from Freeborn County, and originally from Osterdalen. Mr. Estenson tells that his family located where it did on the advice of James Hill himself, to locate opposite Frog Point.

A little later the same year came several Irish families, who located north of the Sand Hill River settlement, mostly in what is now Tysid township. The following year, 1872, came the Ose brothers, from Saterdalen—brothers of the Tollef Ose who came to the Climax area in 1871. They located in what is now Bygland, named after the settlement in Norway from which the Ose brothers came; they were quickly followed by numbers of their county-men.

In 1871, also, a number of Scotchmen, who had come from lower Canada to Mantoba to look for homes, decided that this side of the line offered the better opportunities, and located near the Red Lake River in what is now Huntsville and Nesbit townships. Among the first were Robert and James Coulter, James Thomas, Robert Nesbit and William Fleming. They were quickly followed by their friends and acquaintances, and soon there was a fairly large and prosperous Scotch settlement in the Mallory neighborhood.

The year 1872 marked the beginning of Crookston. Most of the people who settled there first were among those who had worked on the railroad construction. Among the number were E. C. Davis, John Darkow, Bernhard Sampson, Jake Meyers, D. Jacobus, Dick Hussey, the Greenhalgh family, Joseph Barret and family, F. J. LaChappelle and his wife, William Stuart, William Ross, Robert Houston, E. M. Walsh, Henry Shepherd and Frank Jerome.

It was quite evident that a city would arise where the railroad crossed the Red Lake River, and when the line was finally located at the present crossing, the engineers who had first knowledge where the crossing would be, made pre-emption filings upon most of the lands around it. As they made but slight improvements and had no bona-fide residence on it, their claims were for the most part contested and cancelled. William H. Stuart succeeded in getting title to what became the original townsite of Crookston and Robert Houston got what is Fletcher's and Houston's additions and the A. C. Loring addition. Other parts of the present city were obtained by E. C. Davis, Bernard Sampson, Mary Carlton, John Darkow, Joseph Barrett, and Rueben Reynolds, while a part of Frank Jerome's homestead became Jerome's addition.

"It is impossible in the scope of this report to list all of the early pioneers who were first settlers in the founding of the many towns and villages of Polk County. However, a brief summary of Judge Montague's research on other towns as follows."—McCall

"During these early years, settlers located mostly along the

rivers. The land was not surveyed until 1874, so boundry lines and exact locations were not possible, but after the survey mutual adjustments were made without much difficulty. In 1876, J. B. Bottineau, son of the famous guide, brought in 119 families, all of French descent, and the settlement of the Gentilly and the Red Lake Falls territory began. With the completion of the railroad line to St. Vincent and the location of the Land Office in Crookston in the years 1878 and 1879, new impetus was given to land settlement. It was in 1879 that settlers first located in the territory around the present Fertile. It was in 1883 that the 'Thirteen Towns' was opened for settlement and the mad rush for lands in the eastern part of the county commenced. In 1886-87 a number of 'squatters' had located there. Most of them were removed by the government, but a few families managed to remain in the vicinity of the present Fosston. In 1885, the railroad was built from Crookston to Fosston, but it was not until 1887 that the Northern Pacific built north from Detroit through Fertile on to Red Lake Falls and then west to East Grand Forks. The line from Fertile to Crookston was not built until 1890 to 1894."

The early settlers settled quite largely in nationality groups with peoples from Norway and Sweden in the early years dominating the area beginning in the southwest corner of the county to the central, south and east, and northeast parts of the county. The French descent settlers were in the north central part of the county, the Scotch in the northwest central, the Irish in western section and a mixed Bavarian and other nationalities in the northwest central. Through the teachings of English in the public schools language barriers have now disappeared.

1945 May 5th. War in Europe ended.

1945 Sept. 2. War with Japan ended.

1953 July 27th. War in Korea ended.

1946 Tuesday, Feb. 5th. Blizzard struck Red River Valley during Winter Shows.

1957 June 20th. Tornado struck Fargo, N. Dak. Ten lives lost.

1959 December, Polk County Historical Society re-activated. Second floor McKinley School building in Crookston for county museum.

1960 July. Polk County Museum open to public.

1961 Entire McKinley School building acquired for the Polk County Holte Pioneer Museum. Grand opening of complete museum held on April 15 and 16. Museum reported to be one of the finest in Minnesota.

Chapter X

POPULATION TRENDS IN POLK COUNTY

The census of 1860 showed a total population of the original land area of Polk County to be only 240 souls. While this figure was supposedly the white population, it was thought by many to include some Chippewa and half-breed Indians. While there were no means at that time of ascertaining the Indian population of the area, yet with the White Earth and Red Lake bands of Chippewa Indians with tribal headquarters within the confines of the county it was estimated by many people of that day that the Indian population greatly exceeded the white population.

No census figures were given for Polk County in 1870 but in 1880, 11,433 persons were listed with 5,607 reported as native born. In the interim between 1860 and 1880 the county lost the land area south of what is now the southern boundry of Norman and Mahnomen counties and lost all of the land area east of what is now the eastern boundry of Polk County. The land to the east was attached to Beltrami County and the land to the south was added to the new county of Clay. The most rapid growth in population of the county occurred between 1880 and 1890. Even with the loss of 1,432 square miles of land area to Norman County in 1882, the population of the county mounted to 30,192 in 1890. During the period 1890 to 1900 Polk County lost an additional 1,039 miles of land area to Red Lake County but showed a remarkable population figure of 35,429 in 1900.

The United State Census figures for the period 1900 to 1950 inclusive are shown in the following table:

1900	-	-	-	-	35,429
1910	-	-	-	-	36,001
1920	-	-	-	-	37,090
1930	-	-	-	-	36,019
1940	-	-	-	-	37,734
1950	-	-	-	-	35,900

The decade 1920 to 1930 was a period of readjustment of population in the conuty. With the increase in mechanization on the farms following World War I, poor wheat crops in the early twenties due to rust, and opportunities in industrial centers for the returning soldiers, the farms, villages and towns of the county all showed that migration from the county had taken place. The decline in population of the smaller villages of the county began during that period. Villages and towns with good schools, food processing plants or other industries to give employment, have maintained or increased their population. World War II and war industries shrunk the county population during the forties but the rural areas and the small villages suffered mainly in the permanent loss of persons. During the fifties all of the principal towns and villages have been experiencing the most rapid growth in their histories.

Chapter XI

THE PUBLIC SCHOOL SYSTEMS IN POLK COUNTY

The need for public schools was paramount in the thinking of the first settlers of Polk County. The urgency for schools was reflected by the action taken by the three county commissioners before the first general election of county officers in December, 1872, when the board of three commissioners appointed the first County Superintendent of Schools, Mr. Richard J. Reis. The organization of the county did not take place until early in the following year.

The early history of the public schools of Polk County has been fully covered by a former County Superintendent of Schools N. A. Thorson in the **HISTORY AND BIOGRAPHY OF POLK COUNTY** published in 1916. Copies of this history are found in the libraries of the county.

Only a brief resume of observations of the writer will be made of the schools before 1916. It is difficult for one today to realize the original land area and the school problems involved in such a diverse region. The portion of the original county, east of our present county line, was detached to Beltrami County before any schools were established. The county lost nineteen school districts when the area north of the Clay and Becker counties, north to the present southern line of Polk county, was detached from Polk to form Norman County. Additional school districts were lost when Red Lake County was formed out of the north central part of Polk County.

Marked progress in the effectiveness of teaching in the rural schools has been made during the writer's fifty years observations of the schools in Polk and other Red River Valley counties. State aids to rural schools not only enabled the districts to secure better teachers, but to get that aid the schools had to meet state specifications regarding heating, lighting and sanitation. The educational qualifications of teachers were raised through the years, from permits with little normal training on up to four years of normal school or its equivalent with salary premiums today on the amount of graduate training.

The first big step forward was the building of the two-teacher schools, of which there were a number in Polk County. In other less populous districts, farm families cooperated in transporting their children to village or town schools and paid tuition. The real big step was made when the districts around Eldred consolidated and dedicated the first consolidated school in the county in 1912. It was a gala night for Eldred and rural education when a special trainload of people and George E. Vincent helped the community dedicate their building. The Trail Consolidated School was dedicated in 1914.

The evolutionary changes going on in the improvement of quality of teaching, improved facilities, loss in numbers of pupils attending rural schools and improved methods of transportation

all helped pave the way for the school reorganization for the communities in the county that desired to merge with the larger school districts. In compliance with the School Reorganization enabling Law, Chapter 421, Laws of Minnesota, in 1947 a School Survey Committee was formed with representatives from each of the village and town schools.

Quoting from the Final Report of the School Survey Committee submitted on November 1, 1948, regarding school districts in Polk County: "At the present time there are 210 school districts in Polk County. There are nine districts which maintain high school and 200 which maintain ungraded elementary schools. If the proposals made by the Survey Committee are approved by the voters in the areas affected, 28 districts will be eliminated, leaving nine districts maintaining high schools and 153 maintaining ungraded elementary schools."

The report continues, "In the 1947-48 year 101 rural districts maintained their own schools. Six of them employed two teachers each, three employed three each, and the remaining 92 employed one teacher each, making a total of 113 teachers in the ungraded elementary schools. One hundred districts closed their own schools and transported their pupils to other schools. The open schools had an enrollment of 1,833 pupils, or an average of 17 pupils for every teacher employed. Enrollment varied in the one-teacher schools from 3 to 37 pupils. A total of 770 pupils were transported to other public schools from the 100 closed schools; an average of 7.7 pupils per district. In these districts the variation in the number of pupils ranged from a low of one in each of three districts to a high of 27 in one district.' On the "Per Pupil Cost," the report continues, "In the 1947-48 school year the cost of maintenance in Polk County rural schools was \$189.22. In the nine high schools the average per pupil cost was \$174.74, and in the latter both grade and high school pupils were included. Rural schools received an average of \$77.56 per pupil from state funds, and the high schools received \$81.92 per pupil. Rural schools spent an average of \$111.66 per pupil received from local taxes. As may be expected, schools having a small enrollment had the highest per pupil cost. The cost per pupil varies from a low of \$75.10 to a high of \$647.70."

With these facts you can see why the voters in school districts have exceeded the recommendations of the Survey Committee in hastening this latest phase of educational advancement. While some counties in northern Minnesota are fully reorganized so that every boy and girl has access by bus to a city or village high school, yet in Polk county the geography of the county makes complete reorganization of the county difficult at this time.

As a matter of historical interest, School District No. 1 at Crookston was organized in March, 1876. The eight other high schools of the county are: East Grand Forks, Fisher, Climax, Fertile, Mentor, McIntosh, Erskine, and Fosston.



Aerial view of buildings of the Northwest School of Agriculture and Experiment Station at Crookston. School buildings (classroom, administration and dormitories in main and secondary quadrangles center of picture, barns and farm buildings in background.) (Photo 1957.)

THE NORTHWEST SCHOOL OF AGRICULTURE AND EXPERIMENT STATION

The Northwest School of Agriculture and Experiment Station at Crookston serves the Red River Valley counties in the dual capacity as a branch of the Minnesota Experiment Station and as a Regional Sub-Collegiate Branch of the University of Minnesota. The Experiment Station was established by the State Legislature in 1895 after assurances had been given by the late James J. Hill, president of the St. Paul and Pacific Railway that three quarter sections of land in Section 19 Crookston Twp. Polk County would be given the University for Experiment Station purposes. The St. Paul and Pacific Railway was absorbed as a part of the Great Northern Railway and in 1903 that Company gave the University of Minnesota a Conditional Deed with an option to buy the land at any time for \$25.00 per acre, the conditional deed had a reversion clause in which the land, if not used for experimental or educational purpose during any three year period, was to revert back to the donor. (Clear title to the entire section, minus the railroad's Rights of Way was given in 1939 when a committee appointed by the University Regents met with the Great Northern officials regarding the acquisition of the remaining 68 A. of the southwest quarter of the section. The Committee consisting of W. T. Middlebrook, Comptroller, R. J. Quinlivan, Regent, and myself, convinced the railroad officials that with more than three quarters of a million dollars invested on that site indicated, a perpetual interest by the University in that land.

Great credit for the idea of establishing regional Experiment Stations in Minnesota, to be coordinated with the Central University Experiment Station in St. Paul, should be given to Willet M. Hays, then director of the Minnesota Experiment Station. The enabling legislation for the establishing of Regional Experiment Stations in both Northwestern and Northeastern Minnesota was passed by the 1895 Session of the Minnesota legislature, due largely to the work of Senator P. M. Ringdal of Crookston and members of the legislature of Northeastern Minnesota counties. (An interesting and detailed account of the leadership exerted by the Senators from Polk County in the Legislature to passage of the bills establishing the Experiment Station in 1895 and the School of Agriculture in 1905 has been recorded by the late C. G. Selvig in both his book entitled the **TALE OF TWO VALLEYS**, 1951, and his Article in the 1916 edition of the **HISTORY AND BIOGRAPHY OF POLK COUNTY**) Senator A. D. Stephens was credited by Selvig as being the dynamic force behind the legislation establishing the School of Agriculture at Crookston in 1905.

It is not the intent of the writer of this report to repeat the published historical record of the Experiment Station and the School of Agriculture, but rather to report the historical highlights of its growth and accomplishments during the fifty years

of his service and observations of its history.

The first Superintendent of the Northwest Experiment Station was Torger A. Hoverstad (1895 to 1905). Superintendent Hoverstad during his ten years of service, introduced new and better varieties of farm crops, (a precedent which has been followed throughout the history of the Station.) New varieties worthy of mention were: an improved selection of Fife (Minn. 163) and Blue Stem (Minn. No. 169) wheats, Minn. No. 13 corn, Alfalfa, White Blossom Sweet clover, Brome Grass, Red and Mammoth Clovers. Other cereal varieties and flax were brought into the Valley in a program of crop diversification. He encouraged livestock production and helped organize the Red River Valley Dairymen's Association in 1903 and served as its first president, officers serving with him were Levi Steenerson, Secretary, and Esten Estenson, Treasurer. The lack of drainage on the Experiment Station grounds hampered the experimental work with crops. Supt. Hoverstad however, secured some \$2,000 from citizens of Crookston and constructed an open drainage ditch from the southeast corner of the farm to Crookston. This ditch carried the water through a road ditch to Central Avenue in Crookston, thence west to Alexander Street, then south through storm sewer tile to the river. Oddly enough when the drainage ditches for the farm were completed in 1909 the drainage water was diverted west and north into Judicial ditch No. 60 where the farm outlet had a depth of seven feet. Hoverstad was an advocate of tree planting for prairie farms. He planted the main windbreak at the Station in 1896 and 1897. The trees were planted in experimental blocks in which the broad leafed hardy trees were planted alone and in combination. The chief broadleafed trees planted were: Green Ash, White Elm, Boxelder, Cottonwood, White and Golden Willow. The evergreen species that succeeded were Red Cedar, Black Hills, White and Colorado Blue Spruce. A block of several hundred Hackberry trees still growing in nursery rows upon my arrival, came according to Hoverstad, from seedlings collected by Esten Estenson along the Red River at Climax. White and Red (Norway) pines did not succeed on the heavy alkaline soils of the Station. Pines which did succeed, included in the landscaping development of the Campus in later years were, the Scotch, Mugho, Montana, Jack and Austrian pines. Norway spruce varieties and species of Junipers and Arbor Vitae are now growing on the campus.

Professor William Robertson was the second Superintendent of the Experiment Station and beginning with his appointment in 1905, he assumed the duties of directing the Experiment Station and the newly established School of Agriculture. He began his service with the fiscal year of 1905-06 and served until his untimely death in February, 1910. With his many years of experience as professor at the School of Agriculture and College at St. Paul, Professor Robertson established a curriculum of academic and vocational training which extended to the farm homes

of the students. Three years of school work above the eighth grade were offered, with credit for projects completed in the home and on the farm. The Northwest School of Agriculture in 1906, with one school building, serving as administration offices, class rooms, dormitory for boys and a farm house serving as dining hall, home economics laboratory and dormitory for girls got off to a good start. Needed buildings and equipment were added through the years. A class room building for Agriculture, Science and Farm Mechanics (the Owen Building) was built the next year followed by a Boy's Dormitory and Dining Hall (Stephens Hall) in 1908 an Administration Building housing the School Library, Offices, Auditorium and Gymnasium (Kiehle Building) and a dormitory for girls (Robertson Hall) in 1910. In addition to a competent academic staff, Superintendent Robertson secured specialists in Poultry, Farm Crops, Animal and Dairy Husbandry and Agricultural Engineering and Horticulture to teach in the School and initiate research projects in their respective fields. The installation of a surface drainage system augmented by an elaborate system of tile lines was Superintendent Robertson's greatest contribution to the Agricultural Research program at the Experiment Station. Judicial Ditch No. 60 with a depth of seven feet at the Station outlet into the ditch made possible the successful research programs that were to follow in later years. The drainage project was made possible through the active cooperation of the Department of Agricultural Engineering, University of Minnesota, United States Office of Experiment Stations with John T. Stewart, Drainage Engineer supervising the project. Upon the death of Superintendent Robertson in February, 1910, the members of the teaching and Experiment Station staff, under the chairmanship of L. P. Harrington, carried on the work of the School and Station until the arrival of the new Superintendent C. G. Selvig in July of that year.

Conrad G. Selvig, M. A., a prominent school superintendent from Glencoe, Minnesota was appointed by the University Board of Regents to succeed Professor Wm. Robertson as superintendent at the Northwest School and Experiment Station and assumed his duties on July 15, 1910. Upon arriving at the School and Experiment Station, Mr. Selvig saw that a school campus was developing in a farm yard of an Experiment Station. He saw the necessity of moving farm buildings to make room for new and necessary School buildings. Funds were secured from the Legislature for the moving of the farm buildings and at my suggestion, an Architectural and Landscape firm made a landscape plan for the location of the then present and future buildings. With a few minor exceptions, the plan adopted for the location of buildings made in 1911 has been followed through the years.

Superintendent Selvig with a trained staff of specialists in all departments of Agriculture and Farm Engineering, together with heads of Departments of the Central Minnesota Station outlined and started experimental projects of both regional and statewide

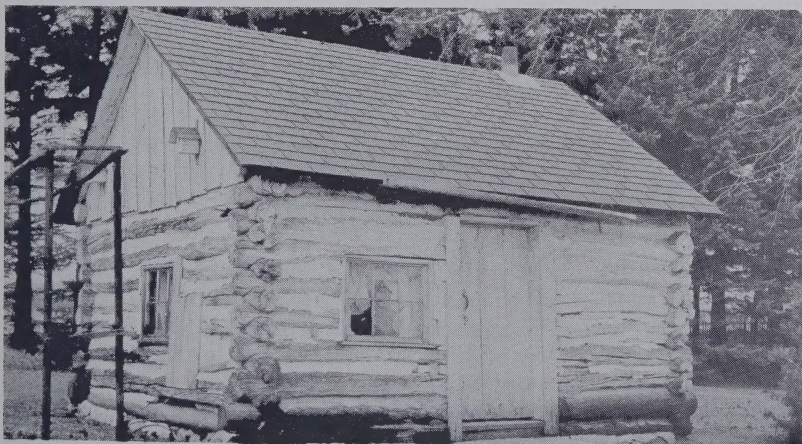
importance. The Experiment Station assumed a continuing leadership in the testing and introducing of new and better varieties of farm and horticultural crops. A notable achievement was the introduction of Grimm alfalfa to the Valley. In 1914 the Experiment Station distributed 18,000 pounds of Grimm alfalfa to more than 500 cooperators. The same year an elaborate and comprehensive fertilizer and crop rotation was started which continued through several rotation cycles. In livestock the shift was made from Milking Strains of Shorthorn to beef type Shorthorns, of the two dairy breeds the Guernsey breed was dropped and all dairy work was centered on the purebred Holstein herd. The breeding work with sheep was centered on the Shropshire breed and the feeding work with swine was done primarily with the Duroc Jersey and Yorkshire breeds. The school grew rapidly in the Selvig administration from 100 to 300 students. Buildings constructed during the Selvig administration, 1910-27, were: Classroom building (Hill Bldg.) 1913, Central Heating plant, 1914, Boys Dormitory (Selvig Hall) 1914, Dining Hall 1920, Animal Products, late twenties. Mr. Selvig organized the Red River Valley Winter Shows in 1910 and served as its president through 1927. His leadership in drainage matters led to the organization of the Red Lake and Clearwater River Conservancy project following the floods of 1919, while surveys and much ground work was done on the project yet final work was postponed on the project through the dry years of the thirties. After the high waters of the late thirties, new officers picked up the project and saw it through to successful completion. Conrad Selvig was a tireless worker and a dynamic leader. He was elected to Congress from the Ninth District in Minnesota in 1926 and served his district brilliantly for three terms. He retired due to illness in 1933 and later moved to Santa Monica, California where he passed away in August 1953.

A. A. Dowell, M. S., Ph.D. (1927-1937) was appointed as Superintendent of the Northwest School of Agriculture and Experiment Station to succeed C. G. Selvig. Dr. Dowell with a rich background of University teaching and Agricultural Extension service in Animal Husbandry did outstanding work in leadership in the improving flocks and herds in the Red River Valley, working through the Red River Valley Winter Shows, Livestock sales and other agencies. In the Experiment Station he helped build up the work in each of the departments in spite of curtailed financial support through the depression years. His insistence on the maintenance of high quality teaching carried the School of Agriculture through the depression years to a new peak in enrollment when he left in 1937. He gave impetus to cattle feeding in the Valley through the cattle feeding trials at the Experiment Station. New buildings constructed in the Dowell administration were: Health Service, Gymnasium and swimming pool, Sheep Barn and extensive remodeling of the Home Economics Building and School Dormitories. Dr. Dowell served as president of the Red River

Valley Winter Show and terms as president of the Red River Valley Development Association, the Red River Valley Dairyman's Association, and the Red River Valley Livestock Association. He resigned his position in April 1937 to assume a professorship in the Department of Agricultural Economics at the St. Paul campus of the University.

T. M. McCall, B.S., M.S., the writer, after some twenty years as Horticulturist and many years field supervisor of the Experiment Station, succeeded A. A. Dowell as Superintendent in April 1937 and served until retirement in 1956, thereby completing forty-five years service to the University of Minnesota. Some highlights of accomplishment during the years include Assistance in clearing the title to the Experiment Station land; acquisition of 380 acres of additional land for the Experiment Station; holding an over-capacity enrollment of over 400 students annually; securing and holding dedicated teachers and department heads of the Experiment Station departments; giving full support to departmental heads in building up work in their local and co-operative projects; securing new and modern dormitory for girls (1946) dedicated as McCall Hall in 1958; cooperating with the Regional Swine Breeding Laboratory in developing the Minnesota No. 2 Swine; promoted the feeding of surplus and cull potatoes to beef cattle.

B. E. Youngquist, M.S., Ph.D., was appointed as Superintendent on July 1, 1956 and has served to date. Of historical interest is the fact that agitation for a Regional Branch of the University (Collegiate Grade) has resulted in enabling legislation by the State Legislature for the University Regents to act on this matter when they see a need for the change. A decision by the Regents favoring the change will await legislative appropriations to see fulfillment of the proposal.



The one remaining well preserved log cabin in Polk county. The Stardig cabin south of McIntosh built after the opening of the Thirteen Towns to settlers in 1883. (Photo Courtesy Franklin Vikan)

Chapter XII

THE WEATHER IN POLK COUNTY

The weather in Polk County is quite typical of the North Central Temperate Zone. The atmospheric conditions vary within the county. The open prairie of West Polk, where there is an open play of summer and winter winds, makes up the fringe area of the eastern Great Plains, while the semi-wooded areas of the eastern part of the county make up a fringe area of the forest section of the state. The cold winters and the freezing of the soil have profound effects on mellowing the heavy soils and inhibiting the growth of many soil parasites. The cold winter air crystallizes the precipitation into snow with only a minimum of sleet and ice. The snow, which generally remains throughout the winter, furnishes a protective blanket to the winter-annual, biennial and perennial crops.

The state, county and township roads have been built up, in recent years, above the general level of the surrounding land and requires a minimum of work to remain in good driving conditions throughout the winter. The winter drifting of snow which plagued the Polk County pioneers has been quite largely eliminated by improved highway construction, the use of temporary snow fences, the planting of windbreaks and the use of modern snow removal equipment.

Seldom has the total annual precipitation in Polk County been excessive. The normal distribution of rainfall throughout the growing season is adequate for the production of good crops. The fifteen to sixteen inches of precipitation for the six months beginning with April, with the moisture retentive soils of the Red River Valley are much less than is required to grow crops successfully in regions south where the soils are less retentive and the summer temperatures are higher.

TABLE

Climatic Summary, Average Temperature and Average Precipitation, Crookston—1931-1952★

TEMPERATURE												Annual
Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.
5.0	9.4	23.0	41.1	54.7	63.7	70.3	68.0	57.4	45.8	26.8	12.1	39.8
PRECIPITATION												
.59	.59	1.00	1.49	2.60	3.43	2.80	3.13	1.93	1.16	.92	.62	20.26

★ U. S. Weather Bureau Office, Minneapolis, Minnesota

Complete weather information can also be secured in Bulletin 408—"Fifty Years of Weather in the Red River Valley", Agricultural Experiment Station, University of Minnesota, St. Paul Minnesota. This data was compiled by Dr. D. C. Soine, agronomist at the Northwest Experiment Station, Crookston, from data collected at the Crookston reporting station.

Other weather data of interest: We can normally expect from 120 to 130 frost-free days during our growing season. Killing frosts

have occurred in Polk County after May 30th only five times in fifty years. According to O. C. Soine, "No definite trend has been followed in determining the dates of killing frost in the spring or fall. The shortest frost-free period occurred in 1915, with only 78 days, while longest frost-free period of 171 days occurred in 1914. The coldest winter month on record was February 1936, with the mean temperature -13.9 degrees. The lowest temperature on record was -51 degrees on February 15, 1936. The warmest summer month has been July. The highest temperature on record was 108 degrees on July 28, 1917." I have noted however that on only twelve times during the period 1900 to 1950 has the temperature been 100 degrees or more and never more than once in any one year.

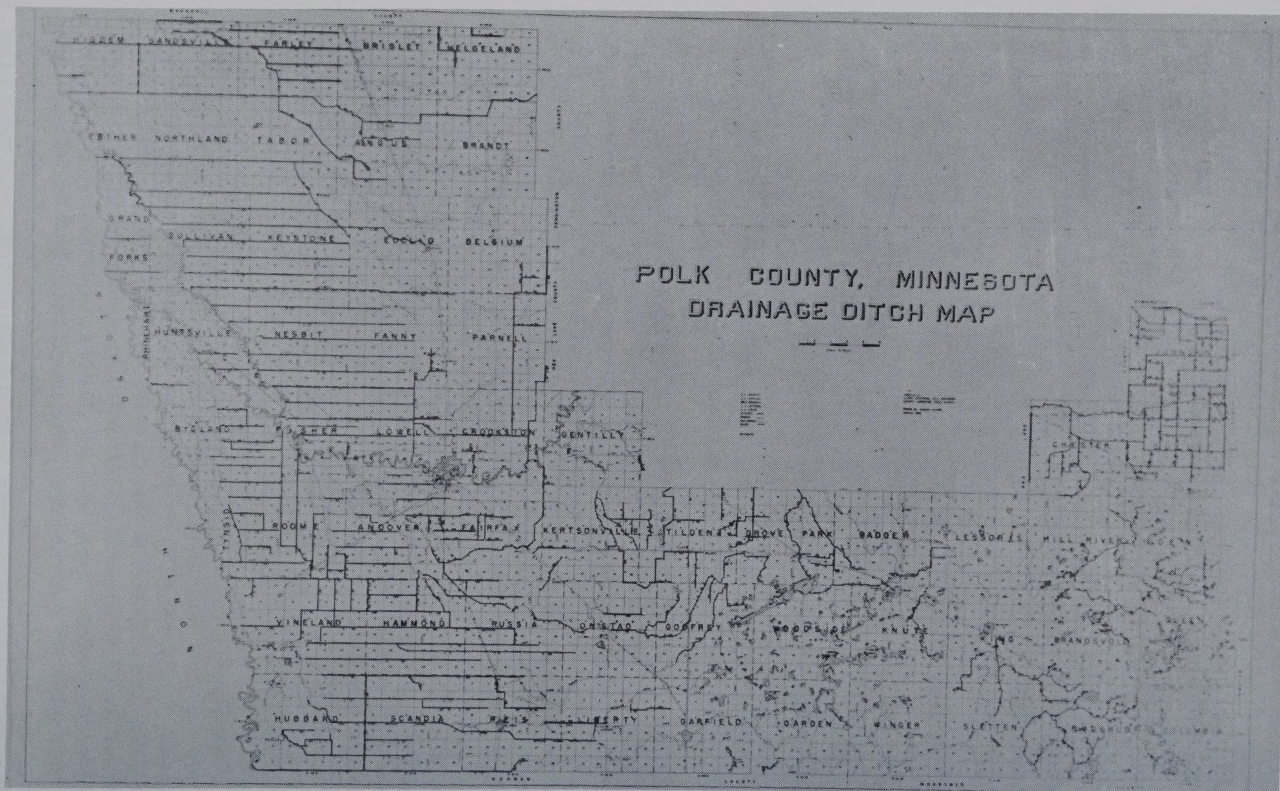
NOTE:—Winter precipitation figures can be transposed into snowfall by allowing ten inches of snow for each inch of precipitation.

The prevailing winds from February through May and September through December are dominantly from the northwest. The percentage of time the wind blows from the various directions has been figured by Soine to be:

Northwest 35	Southwest 5.0
South 29.0	Northeast 3.0
North 14.6	West 1.5
Southeast 14.0	East 1.5

The snow mantle which covers the land in winter does not add materially to the water reserves in the soil. Much of it is lost through evaporation and most of the remainder is lost in the spring run-off before the frost leaves the soil. The winter snowfall is of inestimable value however in furnishing winter protection to crops, preventing deep freezing of the soil and furnishing essential humidity to the winter air. The driest years on record at the Northwest Experimental Station at Crookston since 1900 were 1920 and 1936, with 9.27 and 9.99 inches of precipitation, respectively. The longest dry period occurred between the years 1929 and 1936 with an average annual precipitation of 17 inches. During this period the water resources of northern and northwestern Minnesota were at their lowest ebb. While some long-season crops suffered from lack of rainfall during the drier years, yet in the forty-nine years of the writer's observations, there has never been a total crop failure.

Polk County must be favored geographically, because through the years it has not suffered from the excessive amounts of precipitation that have plagued counties both north and south of our area. The greatest water damage to crops in the last fifty years occurred in 1919 when 8.33 inches of rain fell during the month of July, with more than half of that amount falling during the first few days of that month. The more than four inches of rain during the first days of the month resulted in floods which swept across some of the level lands of west Polk County. Following the run-off fair to good crops were harvester from the drained areas.



Map showing drainage ditches in Polk County. While the natural fall of the land is toward the north-west yet in west Polk county drainage is diverted into east and west ditches located along township roads.

DRAINAGE PROBLEMS OF POLK COUNTY

It appears paradoxical that a county with the annual precipitation varying from 19 to 22 inches should have drainage problems, where in other agricultural sections 35 to 45 inches of rainfall are considered necessary for good crop production. After the better drained land along the watercourses had been taken up by the first wave of settlers, succeeding settlers on the open prairie had to deal with the spring run-off from the melting snows. If moderate to heavy snows covered the land and warm temperatures prevailed in April, the run-off from the ridges combined with the run-off of the prairies to fan out over the more level lands of the Red River Valley covering farm lands and running over roads and drives. While the water covering the frozen soil seldom did much damage to the prairie farms, yet the depressions and pot-holes in the fields were filled as the waters drained away, thus presenting the first drainage problem. The last choice of and for the early settlers on the prairie was the land subject to over-flow from the streams. With the exception of the Red Lake River, other streams flowing across the valley from the higher elevations east did not have deep cut valleys and at flood stage spread out over the farm lands. This was also true of the Red River, which marked the western boundary of the county.

The first drainage work of the prairie farmer, after locating his buildings on the highest spot on the farm, was to drain the pot-holes when an easy outlet could be found. The big problem was to find suitable or adequate outlets without dumping water on a neighbors land. A study of the topography of the county showed the general slope of the prairie section of the county to be from the southeast to the northwest, with a general slope of one foot per mile. The study showed also that the banks of the streams had been built up, especially so with the Red Lake River, so that the land sloped away from the river banks and the natural slopes paralleled the river. In order for the drainage water to get into the river, a high head of water was necessary to cut through the banks. The same was true when drainage ditches were run into the Red Lake River. The Sand Hill River was the chief offender of a stream in the county which spread out over the valley and formed what was called the Neilsville Swamp and also flooded nearby land one to several times per year. The unpredictable behavior of the Sand Hill River and the containing of the spring run-off affected the economy of the region to the extent that farmers, businessmen, and railroad officials became aroused to the seriousness of the drainage problem. As a result of the interest in drainage, the first Red River Valley Drainage Convention was held in Crookston on July 2, 1886, with representatives of all whose interests were involved present. An excellent report of this first drainage convention outlining the resulting action on the Sand

Hill River and other early drainage projects has been recorded by a former county engineer, George A. Ralph, in the **HISTORY AND BIOGRAPHY OF POLK COUNTY**, 1916, pp. 122-124. Drainage engineer Ralph also includes in his report the history of the early drainage legislation through the legislature, outlining procedures for the establishment of county and judicial ditches. According to the reports, the first great accomplishment of the Red River Valley Drainage Commission was to accept the proposal of James J. Hill that a drainage survey be made of the Red River Valley on the terms that The St. Paul, Minneapolis and Manitoba (now the Great Northern) pay one-half the costs and the participating counties pay the other half. The six border counties beginning with Wilkin on the south and extending north to include Kittson all took part in this survey. Ralph further reports that many were amazed to find that the slope of the land to the northwest across the prairies ranged from one to four or more feet per mile.

It was not until the legislative session of 1893 that the Red River Drainage Commission was legalized and an appropriation of \$100,000 was made for drainage work and the first drainage laws were passed. As a result of the enabling drainage acts passed by the legislature, Polk County today has an elaborate and effective system with outlets into the rivers of the county and the Marias (apparently an old channel of the Red Lake River extending from west of Fisher in a north and northwesterly direction to its junction with the Red River several miles north of East Grand Forks). The network of ditches in the county can be seen on the accompanying Drainage Map of Polk County. As a matter of historical record, the first of each of the three types of ditches will be listed. The County Ditch No. 1 is six miles in length, running south and cutting through the river ridge into the Red Lake River two miles west of Crookston. The first state ditch completed by the Red River Valley Drainage Commission was the Sand Hill River State Ditch extending from Beltrami along the Sand Hill and emptying into that stream nine miles west. Judicial Ditch No. 1, one of the largest ditches of the county, has an average width of 50 feet, an average depth of 10 feet, is twelve miles in length and drains the northwest part of the county. In the prairie section of the county the ditches generally are located on section lines with most of the drainage going from east to west. Where it has been necessary to cut through the river ridge with the north and south ditches running into the Red Lake River, severe erosion has taken place at the ditch outlets. Striking examples of the erosion are shown in the Red Lake County ditch four miles east of Crookston and in the outlet of County Ditch No. 1 two miles west of the same city.

Farmers are now cooperating with the two Soil Conservation districts of the county in the farm drainage program. Through the use of land levellers, mechanized ditching and soil carrying equipment, spot losses in field crops are being eliminated and drainage waters are controlled by the best soil conservation practices.

TILE DRAINAGE PROSPECTS FOR POLK COUNTY

Many misconceptions concerning the value of tile drainage prevail in Polk County and in many of the other counties of the Red River Valley. No general rule or universal rule concerning tile drainage can apply to a county with as diversified topography and soil conditions as prevail in this county. There is no question but what tile lines of adequate size can drain sloughs, ponds or small lakes, but having tile lines to carry off surface water from fields is an entirely different matter. In order for tile lines to carry off surface water from the spring run-off, open man-holes must be placed over the tile lines. Even then sedimentation pits should be made to prevent the silting of the tile lines. The chief advantage of a tile line is that of removing the excess gravitational water from the fields during the growing season. Inasmuch as field soils freeze to a depth of four or more feet, the tile lines are not operative for the early spring rains. In the Fargo clay and Fargo silty clay soils often, with the heavy clay sub-soils which dominate the prairie section of the valley rapid percolation of water does not continue even over the tile line when the heavy soils compact in the trench. To get a quick percolation of the water down to the tile line stratas of gravel, cinders or other coarse materials should be placed diagonally from the surface to the tile line in all low spots over the lines. The typical clay subsoil has vertical cleavage and the lateral pull of gravitational water through the soil is very slow.

An extensive system of tile drainage was installed at the Northwest Experiment Station in 1908 in which 4" and 5" tile lines were spaced parallel to each other at distances of 50, 75, 100, 200, 250, 300 and 400 feet apart with outlets into an open ditch system. The greatest depth of the outlet ditch was seven feet at the northwest corner of the section where the outlet emptied into Judicial Ditch 60. Observation wells sunk to the level of the tile lines were placed between tile lines to determine the lateral pull of the gravitational water to the lines. The wells were sunk some fifteen years after the tile lines were installed which allowed time for drainage lines to be established to the tile. To summarize results we concluded that to effectively drain such soils that tile lines would have to be spaced some two rods apart, which would make the cost prohibitive. Studies were also made of kinds of tile, clay and cement types from different sources. Of the tile used at that time, the observations made after some twenty years in the soil disclosed the fact that the clay tile was more durable than the cement tile used in that experiment. It is my observation however that cement tile and culverts today, which are made with washed sand and gravel withstand the disintegrating action of our high lime soils. The same observation applies to all concrete construction which comes in contact with our high lime heavier soil types.

There are many small areas in Polk County that could be profitably tile drained, especially where earth barriers makes

surface drainage impracticable such as sloughs and marshes. Unless great economic gains result from such drainages, it would be better to retain the wet or marsh lands as a refuge for wild life, in some instances the deep sloughs or marshes might well become the drainage outlet for adjacent land in need of drainage.

As was previously pointed out, the slow lateral pull of gravitational water toward tile line in the heavy clay sub-soils of the Red River Valley and the difficulty of getting deep outlets for tile lines makes tile drainage on the level prairie farms impracticable. Lands subject to overflow in the spring run-off and from heavy summer rains present special problems. Roads, drives and dikes may be used to divert the over-flow waters, the farmers' problem then results in handling the rainfall that falls on the farm. The heavy clay sub-soils of the Red River Valley, which jealously hold the capillary water and prevent the rapid drainage of the gravitational water, serve as a water savings account for crops during the dry summers. Trees, shrubs, deep rooted crops like alfalfa, sugar beets and sweet clover not only reduce the water table in the soil but open up the soil for better penetration of summer rains.

A full report on the "Installation of an Experimental Drainage System can be seen in library copies of Bulletin 110, University of Minn., Northwest Experiment Station (now out of print).



Centennial Ox-cart and Delmar Hagen owner and driver who made the journey of 424 miles in 44 days arriving at the Minnesota State Fair August 23rd, 1958. Courtesy Marshall Co. Historical Society.

CHAPTER XIV

POLK COUNTY HIGHWAYS

Polk County, at the end of its first one hundred years of history, has an excellent system of roads and highways. Cities and towns of the county are connected by a fine network of concrete or bituminous paving. A network of well maintained county roads with black-top or good gravel surfacing, connect with the township roads to give all farmers easy access to excellent market roads. This modern road condition has not always prevailed. The early settlers on the clay loam prairie soils had excellent roads during summer when the soil was dry but after rains or when the frost was going out of the soil in the spring, the roads took on the epithet "gumbo". Heavy traffic on the dirt roads was possible only when the roads were dry or frozen. Most of the heavy hauling on country roads was done when the ground was frozen, November through March. After the first snow-fall, before farm fencing was common the bob-sled and cutter traffic seldom paid attention to roadways but cut across country to make the shortest distance to its destination.

The first settlers in Polk County settled along the streams and watercourses, with the cabins and farm buildings in the shelter of the woods adjacent to the farm lands and roads went around the marshes, sloughs and lakes. As the townships got organized, roadways were laid out along section lines generally. A number of diagonal roads have been developed in the county and state trunk highway system to eliminate dangerous corners or curves or unnecessary mileage and construction expense.

As the townships throughout the county got organized and road and bridge fund tax levies were made, the first concern of the town boards was to develop the arterial roads of the township to connect with other township roads and county roads to give each farmer access to a market road. Today, with the exceptions noted, land locations can be easily found by the section line roads.

Polk County is fortunate in having an abundance of gravel for road building purposes in the old beach lines of Lake Agassiz and in numerous gravel pockets or islands in the prairie section of the county. The length of haul of gravel for the western townships of the county varies from a few miles up to twelve or fourteen miles. The length of haul of gravel has not been a deterrent factor in road improvement.

Highway engineers and township supervisors learned early that the roadways should be built up above the level of the surrounding land, for drainage and snow clearance. High roadways also served as barriers to divert water into ditches at the time of the spring run-off.

Great progress has been made in highways across the county since pioneer days. The Red River Trail, a north and south route across the county, is the first recognized trail used by whites in the county. Because it was used for the most part by fur traders when the ground was frozen, the trail was not as well marked as the all season Pembina Trail. The Red River Trail paralleled the Red River from Pembina south through the western part of the western border counties toward Lake Traverse before turning southwestward toward Mendota and later St. Paul. This trail was used from 1844 up to about 1860. The trail came from the north near Tabor, south and east of the Marias, and crossed the Red Lake River approximately one mile west of Fisher, thence southeastward to avoid what was called the swamp to about where Beltrami now stands, thence south. The Pembina Trail, or Ridge Road, was a more or less all season road which followed the Campbell and other higher beaches of the glacial Lake Agassiz from Fertile north and west through Huot, Dorothy and on north and west to Pembina. This trail carried its heaviest traffic during the sixties and in the early seventies when steam boats and railroads took over the hauling of freight. Early settlers used the Ridge Road in Polk County until the township and county roads were developed so that today the identity of the Pembina Trail in Polk County has been quite largely lost. The last trail road of importance in the county, the trail over the gravel ridge east of Crookston through Benoit, Tilden Junction, and Dugdale, was replaced with a straight road to Mentor in 1917-18.

The county is fortunate today in having two transcontinental highways, with concrete paving, crossing the county. U. S. highway No. 2, seventy five miles in length, bisects the county from east to west, entering the county about one-half mile north of Lengby, proceeding west northwest connecting the principal towns of the county paralleling the Great Northern Railway (Duluth branch), through Crookston, and leaving the county at East Grand Forks. U. S. Highway No. 75, a route from Winnipeg, Canada, to the Gulf of Mexico, enters the county from the north some six and one-half miles north of Angus and proceeds south through Crookston and southwest through Climax, leaving the county south of Nielsville.

The first rural concrete paving in Polk County was laid between Crookston and the Northwest School and Experiment Station north of the city. The paving one and one-half miles in length was laid in 1920, which was before the Babcock plan for state highways was adopted. The pavement was paid for by joint assessments against the University of Minnesota, Polk County and the City of Crookston.

The network and condition of the township, county, state aid, state and federal highways in Polk County is a source of pride to the residents of the county. A detailed map of the roads in the county, prepared by the County Engineer, is attach-

ed to this county history as Plate No. 1. A diagonal road of some historic interest is county road No. 13 from Shirley northeastward to Dorothy in Red Lake County. This road was built on an abandoned railroad grade of the Great Northern Railway which connected with the Red Lake Falls line north. This grade was made a highway after the land was turned back to the county. This road was a short-cut vehicular highway to the Pembina Trail. The Pembina Trail, at its junction with county road No. 13 one half mile north of Dorothy, pretty well retains its identity today as a highway well up into Kittson County. It was an all season road and made easy access from Crookston to St. Hilare and points north.

The county roads, from the time the first petition was made to the commissioners for a road from Crookston to Grand Forks in April 1874, to December, 1958, have been arteries for the farm-to-market traffic. Present incumbent County Engineer Mr. Carl Erickson stated to the writer that the first real boost to county road construction outside of county levies came in 1945 when some 33 per cent of the state gasoline tax was returned to the counties. Polk County at that time received some \$250,000. In 1957 State Constitutional Amendment No. 2 increased the allotment to Polk County to some \$300,000 and in 1958 the assistance was \$617,906. Engineer Erickson further reports that: thirty-one county roads totalled 127 miles; seventy state aid roads totalled 800 miles; municipal state aid roads 17 miles. As to the nature of the roads, Mr. Erickson reports: 98.6 miles bituminous, 832 miles of gravel surface, and .4 miles of pavement.

A brief historical review of the trunk highways in Polk County as reported by Lee R. Boyd, District Highway Engineer located at Crookston, includes the following information: 1921—the trunk highway system consisted of 99 miles of dirt road, 55.5 miles of gravel surface, 9.4 miles natural sandy, and 1.2 miles of concrete surface; 1923-24—a sum of \$53,839.54 was spent in construction of state roads in the county; 1931-32—seventy eight miles of concrete paving (T. H. No. 2) was completed across the county together with connecting pavement on T. H. 59 from Erskine south to and beyond the south county line; 1950-56—concrete paving of T. H. 222 from 8 miles north of East Grand Forks to south to Climax, joining U. S. No. 75 at that point. The 1950's also saw the completion of the concrete paving of U. S.-T. H. No. 75 across the county, bituminous surfacing of T. H. 102 from Crookston to Fertile, and T. H. No. 32 from Marcoux to the county line south of Fertile. Other trunk highways entering the county include No. 9 from Crookston south through Beltrami, and No. 92 crossing Chester and Gully townships. In contrast to the 165.1 miles of dirt and gravel roads in the trunk highway system in 1921, Engineer Boyd points out the fact that in 1959 the T. H. system includes 148.4 miles of concrete, 102.6 miles of high type bituminous, and 8.02 miles of light bituminous, for a total of 259.02 miles of trunk highways.

MEETING THE PUBLIC WELFARE NEEDS OF POLK COUNTY

By Emil J. Bagley, Executive Secretary,
Polk County Welfare Board

As a preface to the report on Public Welfare work in Polk County, it is fitting to say that the State of Minnesota, has through its hundred years of history, been in the forefront among the states in its public welfare programs. Minnesota, as a state, has been one of the leaders in vocational rehabilitation in its penal and corrective institutions. Vocational guidance and rehabilitation have always been outstanding features of the training given in our state schools for the deaf, dumb, blind and other physically handicapped and in the Schools of Correction of youthful criminals. A significant step in progress in dealing with juvenile delinquency problems during the past decade has been the creation of the Youth Conservation Commission. This Commission is charged with the responsibility of rehabilitation of youthful offenders of the law, outside the walls of the State Institution. Another step in progress in public welfare has been the removal of all physical restraints in our State Mental Institutions and the adoption of modern methods of diagnosis and treatment of mental patients.

Dependent and neglected children were provided for by the building of a State Public School in 1885. A Children's Code Commission was created which was responsible for several laws, pertaining to children, which were enacted by the 1917 session of the Minnesota Legislature.

Public relief needs, prior to 1932, were met by the communities and townships. In 1932, the relief needs were so great, during the depression, that the Federal Government made funds available for relief through the Reconstruction Finance Corporation. These funds were disbursed in Minnesota through an emergency state organization. In 1933, the Federal Emergency Relief Administration was created and a similar state organization was formed in Minnesota. Through this state organization, funds were distributed as direct relief or as work relief. The necessary staff of workers for the administration of the relief work was hired and paid from Federal funds. This staff in Polk County worked with the Board of County Commissioners and a Child Welfare Board. The Child Welfare Board worked with the welfare of children did not get authority to give funds.

The Minnesota Legislature, in 1937, passed one of the most important pieces of Welfare Legislation which created a County Welfare Board in each county of the state. The law charged these Boards with the duties of administering all forms of public assistance and welfare to both children and adults. These Boards were given also, responsibility for enforcement of all laws for the protection of defective, illegitimate, dependent, neglected and

delinquent children, under supervision of the Minnesota State Board of Control.

The organizational meeting, of the Polk County Welfare Board was held at the Court House on July 8, 1937 and an accurate record of the minutes of the first and subsequent meetings has been kept and is on file at the Welfare office. The first Welfare Board was composed of three County Commissioners and two lay persons. The law stated that a woman should be one of the Board members. The membership of the first County Welfare Board in Polk County consisted of: Peter Ofstedal, Chairman, Adolph Skyberg and William Eichoff, commissioners with Mrs. Amanda Hegtvedt, secretary and Carl P. Tronberg. The Executive Secretaries of the Welfare Board include: Robert Muit, July 1937 to August 1937; Mrs. Dora Thom Jukkola, August 1937 to December 1939; Oscar Skibness, December 1939 to December 1953; Emil J. Bagley, January 1954 to date.

The 1941 Legislature passed a law enlarging the County Welfare Board to seven members. Since that time all five of the County Commissioners plus two lay persons serve on the Welfare Board. When the County Welfare Board was created in 1937, provisions were made to secure a professional staff of workers to administer the program. The positions authorized at the beginning of the program in 1937 were:—Executive Secretary, Case Supervisor and five case workers. Two case workers were added in 1958.

Personnel standards and qualifications for the professional staff have been raised over the years in keeping with the increased duties and responsibilities expected of the Welfare Board. Case workers are now required to have a college degree and successfully pass a written examination before being eligible to apply for a case-work position. A State Merit System program has been created to recruit, select and qualify persons for positions with County Welfare Boards.

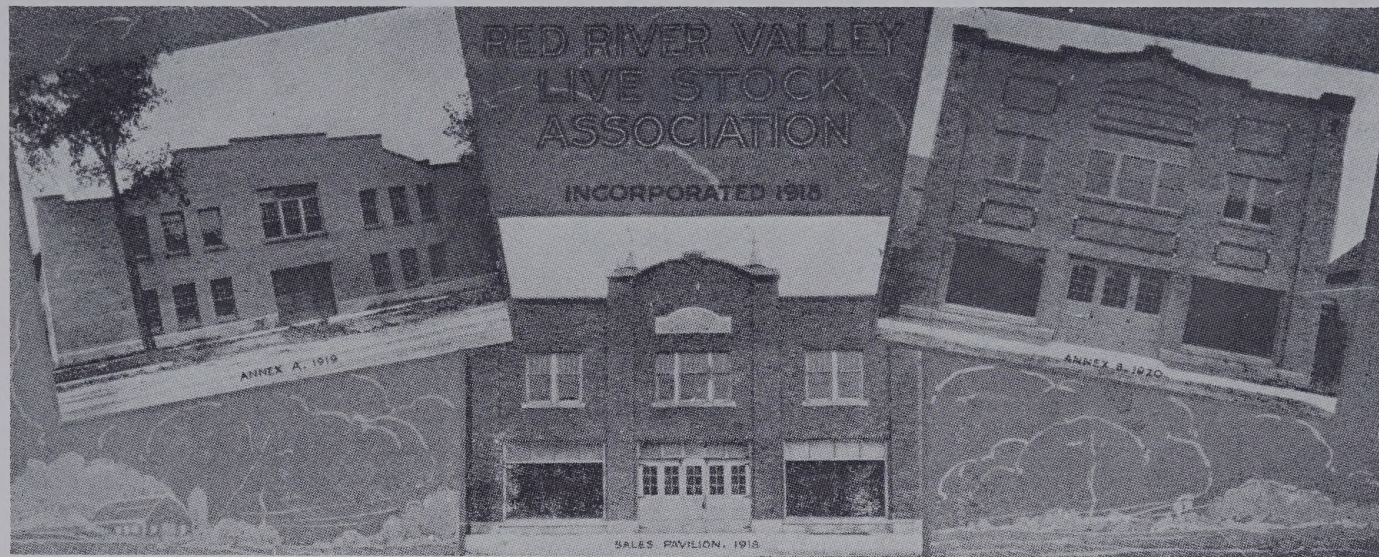
Additional social services are now mandatory for the Welfare Board, especially in the area of medical care, physical rehabilitation, mentally retarded, mentally ill and to the Juvenile Court in providing services to children.

Since the creation of the Welfare Board, funds have been made available on a matching basis to the county from Federal and State governments. The amount from the different levels of government varied through the years. County's share is about 25%.

Polk County Welfare Expense Comparisons, 1938, 1948, 1958

Year	Total Cost	County Funds
1938	\$ 418,720.00	Breakdown of funds not shown
1948	\$ 557,853.00	\$141,000.00
1958	\$1,114,529.90	\$400,000.00

The number of people receiving assistance in Polk County today is about the same as in former years but the costs have increased greatly. This is due in a large measure to the increased cost of living during the past thirty years plus the greater amount now spent for hospital, nursing home and other medical care.



Buildings of the Red River Valley Winter Shows in use 1918-1961, Left to Right: Livestock Barn, Ash Street; Livestock Pavilion, Crops, Broadway; Industrial Building on 4th Street; Poultry in rear.

Chapter XVI

AGRICULTURAL FAIRS IN POLK COUNTY

The desire to foster the production of high quality livestock and crops through county, regional, state and national fairs and exhibitions came to America with the immigrants from Europe and the British Isles. It must be admitted that the most enthusiastic support for our county and regional fairs, before the turn of the century and up until the advent of the automobile were men who "followed the horses". As a result the race track generally and grandstand were the central attraction around which the fair was built. The few exhibitors interested in improving the quality of our crops and livestock remained loyal to the fairs and helped most of the Fair Association to survive through the race horse depression years. Stage shows and carnival attractions today generally fill the grandstands at the county fairs and the horse and automobile races make the circuits of the Regional and State Fairs. The encouragement and awards offered junior exhibitors (4-H and F. F.A.,) has built and maintained interest in the livestock, crops and home economics department of the county and larger fairs.

The original Polk County Fair at Crookston with a race track and a few minor buildings for livestock and crops, was located where the present ball park now stands. The Fair Association was reorganized in 1913 into the Northwestern Minnesota Agricultural Association and was relocated on the southwest corner of Section 19 Crookston twp, the section on which the Northwest School and Experiment Station was situated. This Association received state support and opened its entries to the northwestern counties of the State. As a July or summer fair it competed with the Fertile and Fosston Fairs and was discontinued around 1925 and its charter was transferred to the East Polk County Fair at Fosston. The buildings and conditional deed to the property was transferred to the Red River Valley Livestock Association division of the Red River Valley Winter Shows. In the final distribution of the property, the University of Minnesota purchased the equity held by the Red River Valley Livestock Association which no longer used the land for an Agricultural Fair and the Great Northern Railway transferred the title unconditionally to the University and it is now part of the Northwest Experiment Station.

The Fair at Fosston, according to Franklin Vikan, in the Diamond Jubilee History in 1958, was the first Fair in the county to receive State support. It was organized as the "Thirteen Towns Fair Association" in 1893. The Fair continued until 1905 at which time the Fertile Fair Association took over the State County Fair aid. Some fifteen years later a Fosston Community fair for east Polk County was organized. This Fair was financed by the community until the charter of the discontinued North-

western Minnesota Agricultural Association was transferred to Fosston for the East Polk County Fair. The Fair has been in continuous operation as a summer fair since its reorganization and has served its area very well. Credit for the reorganization, according to Franklin Vikan, goes to Ole Hem of Fosston. The long time Secretary of the Fair was H. Algaard. The Present officers of the East Polk County Fair are: Rueben Tweten, President; C. O. Gunhus, vice president; V. G. Whaley, secretary, and Roy Leervig, treasurer.

The Polk County at Fertile, which serves primarily West Polk County has had the longest continued existence of the Polk County Fairs. It has well equipped buildings and equipment for Crops, Livestock, Poultry 4-H and F.F.A. exhibits. An excellent grandstand and track entertainments.

The first fair at Fertile, according to Hjalmer Erickson, a pioneer of the Fertile community, was staged by the Polk and Norman County Fair Association in 1894. Fairs were held during the three following years but for lack of support the Association failed, losses were cancelled and buildings were sold. George Kronschnabel was the first president and J. Walseth the first secretary of this first Fair Association.

The history of the Polk County Fair Association at Fertile written by Hjalmer Erickson at the time of the Golden Anniversary of the Fair in 1954 appears in the Fertile Journal of July 1 of that year. The first officers of the present Fair organization were John Holsten, president 1904-1908, and James F. Hanson, secretary. The Fair has been in continuous operation annually since 1904 and is now splendidly equipped with all necessary buildings, grandstand and race track with all debts paid. The present officers of the Fair are: Albin Johnson, president; Hjalmer Erickson, vice president; Reynold Erickson, secretary and Solon Gullickson, treasurer.

The Red River Valley Winter Shows and Northwest School's Farmers and Homemakers Week held annually at Crookston has become the most famous winter fair in the entire Northwest. While this winter classic is commonly known as the Red River Valley Winter Shows today yet the educational features for farmers and homemakers emanating from the Northwest School and the University have ever been dominant. The Winter Shows began at the Northwest School and Experiment Station at Crookston in December 1910 under the leadership of the late C. G. Selvig, Superintendent. The primary objectives of the first meetings and shows were—to bring to the farmers and homemakers the latest information on production and marketing of crops and livestock, problems of the homemakers and to exhibit products from the farm and from the home. Implement dealers, manufacturers of farm commodities and merchants enthusiastically supported the first exhibitions of crops, baking and sewing by donating fabulous sweepstakes prizes for wheat, other small grains and corn. Concrete stave silos valued at \$300 and \$400 were given in

consecutive years for grand champion small grain samples with farm implements valued up to \$100 offered as first prizes in other classes, cash and merchandise prizes were awarded in the second and third brackets in crops and homemakers exhibits. The second shows during the winter of 1911-12 (the first in which the writer participated) and 12-13 shows brought crowds from all of the counties of the valley, which taxed the capacity of the facilities at the Northwest School. So the shows were moved to Crookston in 1914 where vacant buildings were used for the shows and the Grand Theater was used for meetings.

Speakers of national fame, authorities from the Minnesota Experiment Station and Extension Division and from nearby states and Canada and liberal prizes for exhibits attracted thousands of farm families to the Shows annually. The railroads cooperated with the shows by running special trains with special round trip rates.

The great success of the Red River Valley Winter Shows through the years has been due largely to its organization, which is unique in agricultural fair circles. Valley wide organizations have given enthusiastic support to the meetings and shows. When the Shows moved to Crookston in 1914, the Red River Valley Development Association and the Crookston Commercial Club (now the Chamber of Commerce) gave direct financial support to the meetings and shows. When the first Live Stock Show was made a part of the Winter Shows in 1917, the Red River Valley Livestock and R. R. V. Dairyman's Associations affiliated with the parent organization. The Agricultural Extension Service of the University cooperated with the Shows from their beginning, the County Agricultural Extension Agents from the Red River Valley Counties have cooperated through the years by serving as Superintendents and assistant Superintendents of the various departments of the Livestock and Crops Shows. The Red River Valley Development Association through the years has sponsored the premiums on the Crops Division of the Winter Shows through appropriations from the counties for the county and district prizes.

Livestock judging contests between Farmer's Club began at the second year of the Winter Shows and have continued through the years. The first Livestock used for the livestock judging came from the Northwest Station's flocks and herds supplemented by different breeds of horses from nearby farms. The first livestock, exhibited as a part of the Winter Shows was shown in Sathre's Garage in downtown Crookston at the 1917 Show, with \$300 offered in cash prizes. An interesting sidelight on the enthusiasm and loyalty of the early exhibitors was their continued support to the Shows through the years. A family record for years of exhibiting cattle and swine was made by P. M. Finkenbinder family, their continuous record of showing livestock began in 1917 and extended through 1960 and three generations of the family.

The enthusiasm of the livestock breeders, after the successful 1917 show, for permanent livestock exhibition buildings, prompted C. G. Selvig and the writer to go on a scouting expedition to Brandon Manitoba. The success of the Brandon Winter Livestock Shows, their buildings and judging arena inspired the Red River Valley Development and Livestock Associations to start a drive for funds to buy property and erect buildings for a permanent home for all divisions of the Winter Shows. Cropsmen, poultrymen, Chambers of Commerce of the Twin Cities, Duluth and towns of the Valley combined forces on a drive for funds and \$20,000 was raised that year and the Pavilion on Broadway adjacent to the Armory was built in time for the 1919 Shows. The livestock was housed in the basement, the main floor made room for concessions and a judging arena and the second floor housed the Crops Show, the Poultry Show was held in a nearby building, the Armory and Presbyterian Church were used for meetings.

Epochal dates in the history of the Red River Valley Winter Shows and Northwest School's Farmers and Homemakers week are:

- 1910 December (last week) First Meetings and Shows at Northwest School.
- 1912-13 Meetings held at Northwest School and Exp. Station.
- 1914 Meetings and Crop Show held in downtown Crookston; First R. R. V. Rural School Contest held, County winners compete annually.
- 1917 First Livestock Show held. Northern Minn. Poultry show held in combination with Winter Shows.
- 1918 Drive for funds for Winter Shows Buildings.
- 1919 First Show held in Livestock Association building. First Purebred Livestock Sale held.
- 1920-21 Fourth Street and Elm Street buildings constructed (\$50,000).
- 1923 to '25 Two Donation Sales held (Farmers donated livestock to help pay on indebtedness on buildings.)
- 1940 Final payment on debt \$7500.00 paid in full.
- 1957 Winter Shows Board of Managers reorganized with assets of the Livestock Association combined with Winter Shows.
- 1958 Agitation for new buildings on a new site, to relieve overcrowded conditions for Shows and Sales, also to seek adequate parking space.
- 1959-60 Goal of \$450,000 set for new buildings on a new 20 acre site purchased from University on U. S. Highways No. 2 and No. 75.

The Red River Valley Winter Shows and Northwest School's Farmers and Homemakers Week has, to a very large degree, accomplished its objectives through its first fifty years of its history. Not only old but new horizons lie ahead for the Winter Shows. Perhaps as great changes lie ahead in farming methods and practices as have been made during the past fifty years.

Tribute and credit is due the more than 2600 stockholders, men and women from all walks of life who had enough faith in promoting the livestock industry of the Valley to put their money, gratuitously in the project. Business men who contributed their time and money in cooperating with farmers, helped develop a solidarity of spirit that has made the Red River Valley a great Agricultural Empire. It is impossible to list the names of all men who have contributed to the success of the Winter Shows. A few of the men who served in official capacities at the Winter Shows are:

Presidents—C. G. Selvig 1910-27; A. A. Dowell 1927-37; T. M. McCall 1937-56; B. E. Youngquist 1956 to date.

Board of Managers and others assisting in the organization were:

C. C. Strander S. M. Sivertson, W. R. Low, Joseph Ball, E. W. Spring of Crookston, Leslie Welter, Moorhead; Frank Jeffers, Sam Hunt, H. V. Higginbotham of Red Lake Falls, Wm. Dahlquist, Thief River Falls; Sam Olson, Ada. The more recent Board of Managers include: Harold Thompforde, C. M. Pesek, Stuart Meleod, Thief River Falls; Adolph Skyberg, Fisher; O. C. Soine, Crookston; Frank Forbes, St. Paul. H. A. Pflughoeft, St. Paul; William Strickler, Euclid.

Business managers of the Shows through the years have been:

Lee R. Boyd, C. M. Cathcart, C. H. Zealand, John Saugstad of Crookston and Paul Engelstad of Thief River Falls. Livestock Assoc. Secretary—O. M. Kiser 1920-1957, Sales Manager—A. J. Dexter, St. Paul 1938-61.

The new main unit of the Winter Shows building is now under construction on a twenty acre site secured from the Northwest School and Experiment Station on the S. E. corner, Sec. 24, Lowell Twp. adjacent to U. S. Highways '2' and '75' on the north edge of Crookston. The main, clear span, steel, insulated building 180' by 300', costing \$300,000 will be ready to house the 1962 Crops, Livestock and Industrial exhibits.

Chapter XVII

POLK COUNTY AN AGRICULTURAL EMPIRE

(Its Soil and Soil Types)

Polk County is one of the large agricultural counties of Minnesota with a land area of 1980 square miles, consisting of 59 townships, with its greatest width on the west side of the county some 47 miles and its greatest length, east and west 92.5 miles. According to Frank Leverett from the United States Geological Survey who cooperated with the Minnesota Geological Survey, in a study of the Surface Formations and Agricultural Conditions of Northwestern Minnesota, bulletin No. 12 Minnesota Geological Survey. "Nearly half of the county has the lacustrine black clay and clay loam. An area of about 500 square miles in the southeastern part of the county lies outside the limits of the glacial Lake Agassiz." The first soil survey made in Polk County was made by the Bureau of Soils United States Department of Agriculture in 1906. This study covered an area around and southwest of Crookston. (Soil Survey of the Crookston Area, Minnesota Field Operation of the Bureau of Soils.) The soils map of northwestern Minnesota for all counties north of and including Ottertail and Wadena county incorporating all of the information gained up to that date was published by Leverett in the bulletin previously mentioned. In explaining the formation of our Polk County soils Everett states* "The deep part of the lake along the borders of the Red River, received nearly all of the fine sediment which was washed out from the till at higher levels. This forms the bulk of the rich black clay and clay loam of the Red River Basin. At its eastern border 15 to 25 miles from the Red River there is a transition to sand. This is succeeded within two to five miles east by stony deposits which seem to be glacial material worked over by the lake.

Percentages of Classes of Land in Polk County By Leverett — 1914

	sq. miles	% of county
Lacustrine black clay and clay loam -----	835	42.2
Sandy Deposits of old lake shores -----	305	15.4
Clayey till plain -----	265	13.4
Lake-washed clayey till, pebbly clay loam ---	230	11.6
Swamps and small lakes and ponds -----	116	5.9
Sandy moraine -----	86	4.3
Clayey moraine -----	73	3.7
Lake-washed sandy till, pebbly sandy loam ----	60	3.0

The soils of the county have been more accurately mapped and classified by the United States Bureau of Chemistry and Soils in cooperation with University of Minnesota Experiment Department of Soils. The comprehensive soils map of the area classifies the soil types and pictures the areas of each in their exact locations in color. This report is entitled "Soil Survey (Reconnaissance) The Red River Valley Area of Minnesota. Series 1933 No. 25". The report can be secured from the Superintendent of Documents Washington D. C. price \$1.25. Because of the great differentiation of soil types east of the Campbell beach of the glacial Lake Agassiz it is impossible to describe the smaller soil type areas. Some of the larger soil type areas of central and east Polk county are: Ulen loamy sand, Beltrami east and north to Melvin; Nebish loam a large area around Maple and Union Lakes also in Columbia, Queen, Hill River and part of Lessor; Barnes Sandy Loam covers quite a large area north and south from the west line of Fosston for some five miles west and eight or more miles north and south. Much of the rest of eastern Polk County is made of a variety of soil types in small areas or undifferentiated soils with small areas of peat in various stages of decay where undrained bogs and ponds once existed. The peat is generally described as high-lime peat. The writer in searching for acid peat in areas contiguous to U. S. Highway No. 2 did not find it until he reached Clearwater county. The soil type found in the county to the west of the Campbell and McCauley beaches is basically clayey in nature. The larger part of the land west of the Winnipeg branch of the Great Northern Railway from Crookston north consists of Fargo clay and Fargo Silty clay soils, these soil types continue southeast and west of Crookston with Beltrami as the southeast cornered boundaries. The largest belt of Beardon Silty Loam occurs in the Minnesota Point area beginning some five miles south of East Grand Forks thence east some five miles in an irregular outlined area some twelve miles north and south. Other Beardon Loam series occur north of Eldred, north of Fisher and in the Northwest part of the county and in smaller areas some in the vicinity of Crookston and southeast of that city. Quite a large tract of peat land extended west of Beltrami toward Nielsville where the Sand Hill river spread out over the prairie before the channel of the river was straightened and before open drainage ditches in the area were installed. After the land was drained some of the peat land was burned over and the thinner layers of peat were worked into the soil, and what was once considered a swamp is now one of the very productive parts of the county. While the lighter and more friable soils of eastern Polk county on the fringe of the forest area were shunned by the first early settlers yet their wide adaptability to different crops and suitability to a diversified live stock type of farming made the area equally important to the western large farm small grain area.

THE SOIL AND SOIL MANAGEMENT PROBLEMS OF POLK COUNTY

The virgin soils of the Red River Valley were well supplied with all the essential elements of fertility to produce maximum yields of adapted crops. The great amount of available and potential supply of the necessary elements for plant growth, caused many orators and not a few soil scientists to compare the fertility of the land to the great Valley of the Nile, supposedly the richest agricultural valley in the world. The facts that the fertility was present could not be denied but unlike the Nile Valley, the Red River Valley was not being enriched annually by rich silt deposits by flooding of the area.

Bumper crops, on the well drained land, were the rule rather than the exception. Grain crops were grown continuously on the prairie section of the county from pioneer days up to the time of World War I, with spring wheats the major crop. Little attention was paid, during the first forty years of farming in the county to the maintenance of the fertility of the soil.

A common soil depleting practice, which continued up to the late twenties on the larger prairie farms was that of burning the straw. Other than oat straw, straw from barley wheat and flax had little value and with the weed seed content which accumulated with the continuous grain cropping the straw piles were considered a menace. As a result, at threshing time, the night horizons were illuminated with flames from the burning straw piles.

The fallowing of land and the plowing down of green manures did not become common farm practices until the early twenties. Two perennial weeds, Sow thistle and Quack grass, blessings in disguise, were responsible more than any other factors in starting the soil fallow. Experimental evidence which had been accumulating up to this time pointed to the facts that continuous grain cropping and the removal of plant residues from the land were quite largely responsible for the changed physical condition of the heavier soil types of the prairie area. Experiments in the plowing under of straw, farm manures and green manuring crops proved that, the humus content of the soil could be restored and that the soil could be brought back to a good state of tilth.

The use of farmyard manures in the smaller livestock farms in the maintenance of soil fertility was an universal practice. On many of the larger farms however, the spreading of the small amounts of manures available on the land was considered detrimental because of the weed seed pollution of the straw in the manure. When farmyard manures were used they were generally applied to land for corn or some other cultivated crops.

Early pioneer work with commercial fertilizers was done at the Northwest Experiment Station. Comprehensive testing of commercial fertilizing materials alone and in combination and

in combination with straw and barnyard manures was started in 1914 with various crops and in various crop rotations. It was found that the prairie soils and most of the soils of the county were of high lime content which made them suitable for leguminous crops such as clovers, alfalfa, peas beans etc. Due to the lack of nitrogen fixing bacteria in the soil it was found necessary to use inoculated seed to get the crops established. It was found also that the county soils were rich in the mineral elements of plant food such as phosphate and potash and in general a fair to good supply of nitrogen. While the potential supply of potash in the soil was adequate for many generations and the phosphate and nitrogen were in lesser amounts, it was found that the available supply of the mineral elements, especially phosphate was by continuous cropping deficient for maximum yields of crops. It was found, early, in the fertilizer tests at the Northwest Station that phosphate fertilizers gave their most profitable return when applied to alfalfa and other legumes and in the early twenties profitable returns were shown on potatoes, sugar beets and grain crops. The economy of high analysis fertilizers was demonstrated during the late twenties and early thirties. The compulsory requirement for the use of 125 lbs. of 16 or 20% phosphate per acre in the sugar beet contract and the beneficial results obtained from that application, helped demonstrate the value of that fertility element. It was found that phosphate fertilization of hay and grain crops fed to livestock helped overcome the phosphate deficiency malady in livestock in certain areas of southeast Polk and central Mahanomie counties.

The guess work in knowing what fertilizers to use and the amounts per acre has now been quite largely removed by chemical analysis of soils from the different fields of farms and from field tests. At a slight cost per sample, farmers today can get soils tested at a State Soil Testing Laboratory and get also directions for field fertilization. Soil fertilization prescriptions can now be filled by the farmer himself, by the use of fertilizer attachments to his drills, or planters or he can make use of the commercial agencies available to spread different materials in gaseous, liquid or pellet form.

The problem of the so-called "alkali spots" on fields in the prairie sections of the county has been solved. While the heavy soil types in the major portion of the county are on the alkaline side which is conducive to excellent growth for most field crops yet alkaline soils with a Ph reading of 8 are unsuited for many fruits and acid loving trees and shrubs. The "alkali spot" trouble was most noticeable during dry years in which the crops in various parts of the grain fields would be stunted in growth and produce little if any marketable seed. The Department of Soils of the University made studies of the problem at the Northwest Experiment Station. By studies of the soil profiles of the "alkali spots" it was found that domes or ridges of heavier soils came to the surface which were less permeable to soil moisture than adjacent

soil areas and that the "spots" were lower in moisture content than adjacent areas. When the moisture content of the "spot" was brought up or evened-up to adjacent areas, the crops levelled off together. The growing of deep rooted crops on the land and deep plowing levelled up the performance of crops on the land. A different situation prevails at times when a physiological yellowing or chlorotic condition appears on the foliage of certain field crops and woody plants due to iron-deficiency. This situation is more generally harmful to ornamental trees and shrubs and can be corrected by the use of iron chelates, applied to the soil or used early as a foliage spray.

The hearty cooperation between farmers, the Experiment Station and the Agricultural Extension service has been responsible for the solving of many perplexing problems which have confronted crop producers during the first 100 years of Polk County History.

THE USE OF COMMERCIAL FERTILIZERS HAS BECOME QUITE GENERAL IN POLK COUNTY

The 1954 U. S. Census reports show that approximately half (17750) farms in Polk County reported the use of commercial fertilizers. A total of 14,870 tons of fertilizer, costing \$1,182,570.00 were used on some 322,046 acres.

Fertilizer Distribution on Crops of the County—1954

Crop	Acreage	Tons	Farms reporting
Oats -----	41,701	1,506	698
Hay-Crop land ----	16,345	1,044	486
Pasture -----	2,023	122	40
Corn -----	8,860	556	410
Potatoes & Vegetables	15,737	1,865	213
Other Crops -----	246,931	9,700	1312

Phosphate was the major plant food element used in the fertilizers with small amounts of nitrogen and potash on grain crops and higher percentage of nitrogen on pastures. State Soil Laboratory test results served as a guide for most farmers using commercial fertilizers.

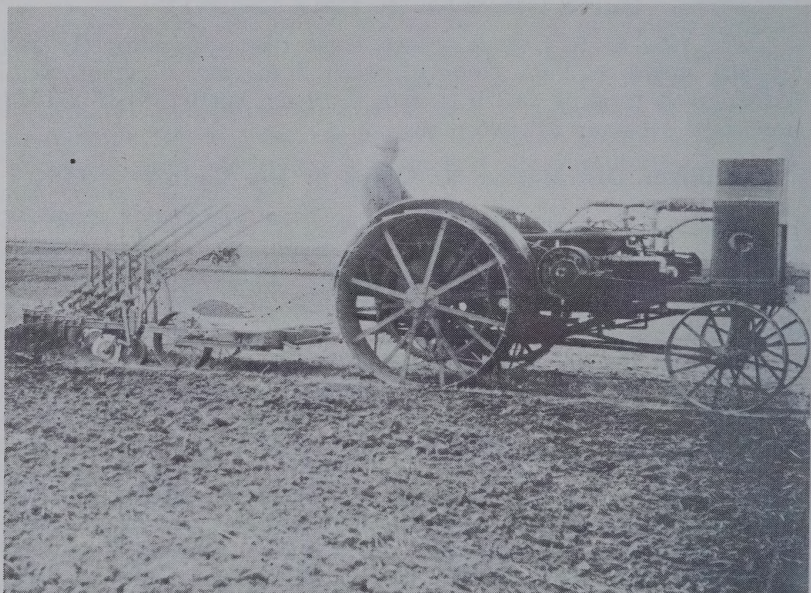
The modern trend in the application of fertilizers to row crops is away from the broadcast method to the application of the fertilizers in or along side the row with fertilizer attachment to the planters. Summer applications of quick acting fertilizers may be applied as side dressings to the row with fertilizing attachments to the cultivator. Many farmers today prefer to have the dealers apply the fertilizers to their fields. Dealers are equipped to apply nitrogenous fertilizers as a gas (dry or liquid), and the dry forms of other fertilizers either broadcast or with drills.

Chapter XIX

THE FIFTY PRE-CENTENNIAL YEARS OF AGRICULTURAL HISTORY OF POLK COUNTY

The most profound changes in Agricultural History have taken place during the five decades beginning back in 1910. Throughout the history of mankind, wars have precipitated changes in weapons and strategy of warfare, modes of living and the economic welfare of all nations concerned. World War I was no exception to this rule in hastening changes in agricultural production in Polk County.

Farmers, on the broad acres of the prairie section of the county were seeking ways to ease the load on horses in land plowing. The theory of power farming was sound, however the use of the heavy steam engines on the land was not practicable, they bogged down easily in the low places of fields and their slow speed did not make for good shearing action on the plows.



Mechanization of farming practices began in 1912 in Polk County. (The first A. O. Espe tractor) Courtesy Espe family.

Farmers of our country, during World War I, were called on to increase food production to feed our allies and the rest of the world at a time when the young men of the nation were called into military service. Farm families did respond to the call for more production of food stocks by everyone working and by increasing the mechanization of the farming practices. Mechanically minded farmers, mechanics and farm implement manufacturers

sought mechanical means to do plowing and other heavy farm work. Polk county had the distinction of having one of the first inventors of the farm gas or oil burninc tractors. A. O. Espe, of Crookston was the inventor of a tractor whose patent rights were purchased by the Avery Tractor company. The writer, superintended the operation of the Espe tractor on the Northwest Station.

The use of the farm tractor marked the beginning of rapid changes which took place in farm practices which gained momentum in the early twenties and has continued up to the present time. Mechanized power on the farms during the twenties and through the depression period of the thirties, was used primarily to relieve horses of the heavy work of plowing and field preparation, following etc. Field machinery companies increased the cut of grain binders gearing them to the power take-off on tractors. Smaller threshing machines with 20 to 24 inch cylinders were built so the average sized farmer could have his own machine. The late thirties and early forties at the advent of World War II marked the introduction of the grain combine into the Red River Valley. Small 6 foot combines were made for the small farmer with ten, twelve and fourteen foot combines made for the larger farmers. The first combines were of the Pull-type with power take-offs for the smaller sizes and separate motors to run the threshing mechanisms of the larger combines. It was found in the midwest states that straight combining such as was practiced in the drier regions of the great Plains and Northwest, was not practicable in the Red River Valley, unless grain drying facilities were available, so binders were first used to run the grain in swaths and left on the stubble until the moisture content of the grain was safe for threshing and storage. The binders were replaced shortly by the cheaper and more economical swathers of sizes to fit the combine sizes. While many self-propelled combines were in use during the forties, yet they achieved their greatest perfection in construction by 1958. The self-propelled swather, has since 1952 become very popular and is supplementary equipment now on many farms of the county. The application of power to the work of the farm was contagious to other parts of the farm economy.

The extension of electric lines by the power companies in the twenties and thirties and the coming of the electric cooperatives such as the Rural Electric Administration during the forties and fifties, extended the use of mechanical power to every phase of farm life. Electricity and automotive power in the home, in the farm buildings and around the farmstead have made the hand pump and hand operated machines as obsolete as the hitching post. Power from electricity, heat and energy from gasoline and oils have elevated the standard of living of the farm family to a par with that of the city dweller.

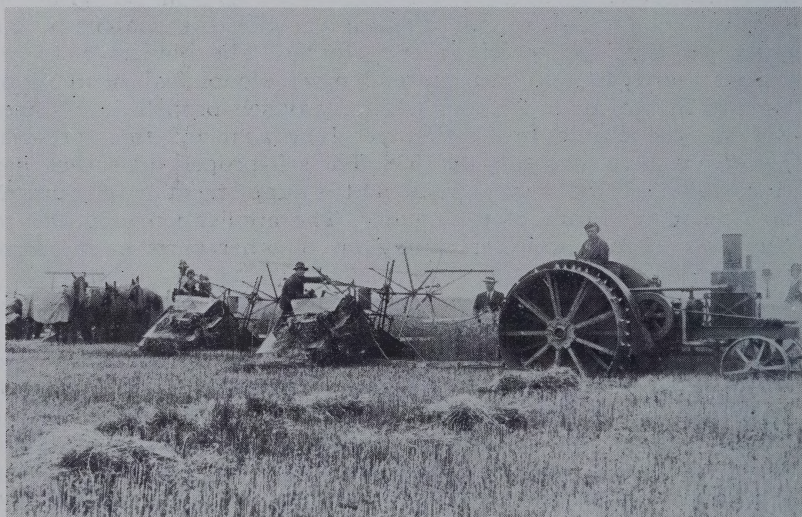
Other marks of progress during the past fifty years will be discussed in the presentation of the crops and livestock statistics.

HARLEY G. SWENSON
801 THORNDALE AVENUE
CROOKSTON, MINN. 56716

FIFTY YEARS OF PROGRESS IN CROP PRODUCTION IN POLK COUNTY

"Food and fiber for survival" was the motto of the early pioneer in Polk County. Basically that motto holds true today, however today we expect from life more than mere survival. We expect our food producers to raise not only enough for himself but enough to feed some other forty people. While we no longer have the barter system direct, yet indirectly we barter our surplus foods for commodities that we can use.

Wheat was the most important crop to the pioneer, he produced it in surplus from the virgin lands of the county and it found a ready market when shipping facilities were available. The wheat crop, perhaps more than any other commodity, spurred the railroad builders, such as James J. Hill and others into a race to get the wheat shipping business. The chief competition for the wheat shipments was between the Great Northern and Northern Pacific railroads in Polk County. Poor drainage and grasshopper invasions were the major handicaps to the growing of wheat and other crops. Luckily the grasshopper invasions were far between in years, the 1878-79 invasions being the most devastating. Local outbreak of grasshoppers occurred during the drier years but flights of the migratory and lesser migratory locust occurred only in recent times during the dry years of the middle thirties. The chief menace to the wheat crop however was Black Stem Rust



The Avery (Espe) tractor replaced eight horses before World War I. This first stage of mechanized harvesting did not eliminate men but speeded up work. Later larger binders with "power take-offs" reduced man labor requirements.

which during the period 1910 to 1914 was most severe on the late wheat varieties such as Blue Stem. A new Canadian variety of wheat, Marquis, a high quality bread wheat, earlier in season than Blue Stem largely replaced the old standard varieties until the bad rust years beginning in the early twenties. While the farmers were seeking earlier varieties of wheat such as Reward to escape the rust, the Experiment Stations of Minnesota and North Dakota were attacking the problem on two fronts namely: Breeding rust resistant varieties and through Barberry eradication eliminating the alternate host of the Black Stem rust. With the wide spread planting of the European Barberry as an ornamental shrub and with the dissemination of the seed fruits of that shrub by birds throughout the wheat belt, the wheat breeders were in an uphill battle trying to develop rust resistant varieties faster than the new strains of rust were being developed on the Barberry.



Replacement of horses complete on farms of Kliner brothers near Euclid, Minnesota. Where grain dryers are available, straight combining eliminates many harvesting problems.

Hard spring wheat varieties resistant to the early strains of the then existing rusts were Kota and Ceres from North Dakota and Marquillo and later Thatcher from the Minnesota Station, followed in recent times by Lee from the Minnesota Station and Selkirk a Canadian variety which is the dominant bread wheat variety grown in the county today. The Durum varieties such as Kubanka and Mindum quite largely escaped the serious rust ravages until the late and wet season of 1950 in which the crop that year was practically ruined by a new strain of rust. Since that date, the United States Department of Agriculture, Cereal Breeding division in cooperation with the Experiment Stations of North Dakota, Minnesota and other Plains states has developed three new varieties of Durum the most promising of which is the

Langdon. With Selkirk and Langdon wheat varieties available and effective chemicals for the control of grasshoppers, the chief worry of farmers now is the disposal of wheat crops produced.

Polk county, since railroad transportation has been available, has been a surplus producer of wheat, oats, barley, rye and flax. Disease resistance in the oat crop for example, the most serious diseases affecting yields have been stem rust, crown rust and smut. Oat breeders throughout the upper Mississippi states and Canada have produced superior varieties resistant to the major diseases in the early mid-season and late variety groups. Oat growers in Polk County today have a choice of any one of a number of varieties, all of good bushel weight, varieties on the recommended list from the Oat breeders from different sources are: Minnesota varieties—Andrew and Minhafer; Wisconsin—Branch and Sauk; Canada—Ajax, Garry and Rodney.

Barley has become increasingly important as a grain crop in recent years because of the premium quality of malting varieties grown in the county and the high yielding characteristics of the feed barley varieties. Its value as a feed for fattening livestock took on a new impetus when feed manufacturers began pelleting the ground barley and steam rolling the whole grain. A great deal of research work has been and is being done in the breeding of barley to improve-malting quality, disease resistance to leaf stem and root diseases, bushel weight and stiffer straw. Varieties that are white seeded when pearled are preferred in this country. Some Canadian varieties with blue aluerone (blue barleys) such as a new variety Parkland are accepted by some in the malting trade. Acceptable malting varieties in 1958 are Kindred and Traill, two feed barleys recommended include Forrest from Minnesota and Vantage from Canada.

Rye is not widely grown in Polk County. Winter rye is generally grown on the lighter soils of the county where mid-summer dryness would be more serious to the spring planted crops. Other small grains generally give greater cash returns per acre than either fall or spring rye. Hardiness and good weight per bushel are two requirements for a good rye. Recommended varieties in 1958 are: Caribou and Adams.

Flax during pioner days was generally the first crop grown on new breaking. Because the second and third crops of flax on land yielded in diminishing returns, the early pioneers concluded that flax was "hard on the land". This theory was thoroughly disproved by Professor L. H. Bolley, a plant pathologist from North Dakota Agricultural Experiment Station following World War I. He proved that a disease, flax wilt, which lives over in the soil was responsible for the low yields or loss of crop on old flax land. With that information, Professor Bolley and others began selecting resistant plants from infected seed beds and through selections and crosses developed wilt resistant varieties. Since that time flax breeders have achieved resistance to rust

and other diseases. A more recent virus disease, aster yellows, caused a high percentage of loss to the flax crop in 1958.

Corn, a seed crop grown by the American Indians probably several centuries before the coming of the white man to North America, did not become a dependable seed crop in Polk County until comparatively recent times. Minnesota farmers did not look with too much favor on the dependable flint corn varieties developed from the Indian types of flint corn even though yields of forty to sixty bushels could be obtained. Dent corns were preferred by most farmers because of the higher tonnage of corn silage produced per acre. Only in odd years of late falls was ear corn dry enough to store safely in cribs. From 1910 to the middle thirties only a few early varieties of dent corns were recommended for Polk County. The list included Minnesota No. 23, an early white cap dent, Russler's White Dent, Northwestern Dent (N.W. Exp. strain), Minnesota No. 13, Minnesota No. 13 Haney Strain yellow dents. In Flint corns the varieties most commonly grown were Pearl, Dakota White, Gehu-yellow, Smut-nose and Mercer. A number of late varieties were grown for fodder and silage. While a number of farmers in the county husked out some of the early varieties each year, yet the production of ear corn up to the time early hybrid varieties were introduced in the late thirties, was on a "catch as catch can" basis, two or three years out of five. The major use for corn in Polk County has been for silage, fodder or hogging off. Farmers have found that the new hybrid varieties which reach a fair state of maturity make silage of higher feed value than the tall late growing silage corns. Census figures in 1949 showed that 65 per cent of the corn crop in the county was used for silage, fodder or hogging off; the 1954 figures showed an increased percentage of 72 per cent. Since the introduction of commercial grain dryers and the corn-husking-shelling combine the trend of producing dry shelled corn in showing a marked increase. The introduction of early hardy hybrid corns and the use of adequate amounts of commercial fertilizer together with chemical aids in weed control have put the acre cash value of the corn crop on a parity with other farm crops in the valley.

Soybeans have been in variety test trials at the Northwest Experiment Station more than thirty years. Even the early varieties such as Wisconsin Blacks could not be depended on for seed crops more than two to three years out of five. The Agronomists recommended them to farmers with livestock so the crop could be salvaged for hay if the season was unfavorable for seed. During the past fifteen years, plant breeders have produced early dependable varieties and the commercial acreage of soybeans has been pushing steadily northward in the Red River Valley. Isolated growers in the county were growing a total of some 100 acres per year until 1942 when 1100 acres were grown. The acreage dropped back too from 100 to 300 acres until 1954 when new interest in the crop was aroused by the construction of a

processing plant in Norman County. The acreage in 1954 was 410 acres, 3200 acres in 1955, 16,600 acres in 1956, 10,400 acres in 1957 and 10,900 in 1958. The soybeans are legumious and as a cultivated crop fit well in a crop rotation plan. Included in the recommended variety list are Acme, Flambeau and Capital.

Sunflowers

During the past ten years, from a few to several hundred acres of Sunflowers have been grown in the county. The first sunflowers grown in Minnesota were grown in northeastern Minnesota as a silage crop, when cooler temperatures were unfavorable for corn. The tall growing Russian sunflowers were grown in experimental plots for silage at the Northwest Experiment Station some thirty years ago. The crop out-yielded corn in tonnage but the tough, hard stems made the crop difficult to handle. Cows ate the silage when they became accustomed to it. The commercial sunflower varieties of today are grown for seed. The plants grow from four to six feet in height and the seed crop is harvested by straight combining. Much of the crop has been sold to an oil processing plant at Altoona, Manitoba, while some of the crop goes to feed dealers for bird seed. The better varieties grown today are hybrids and new hybrid seed should be purchased each year, same as hybrid corn. The hybrid Advance has proved to be the best high oil content variety and yields 1000 to 2000 pounds of seed per acre. The taller, open pollinated varieties such as Arrowhead gives higher yields but are less desirable for oil.

Hemp

Hemp, as a fiber crop, has been grown experimentally by farmers at three different intervals in the county's history and at two different intervals by the Northwest Experiment Station at Crookston. A few stacks of hemp were observed on farms in the Crookston vicinity by the writer in 1911. The stacks were reported as three years old and due to the failure of the hemp to ret, the stacks were burned.

During and immediately following World Wars I and II when the importation of hemp was in jeopardy, the United States Department of Agriculture, through its Office of Fiber Investigations, cooperated with the State Experiment Stations of the Midwest in the growing of hemp and several hemp mills were built in central and south central Minnesota. In the World War I period the International Harvester Company cooperated with the United States Department of Agriculture in building hemp harvesting machinery which was tested at the Northwest Experiment Station. The company set up a hemp processing plant at Grand Forks. The hemp tests in the World War II period corroborated the findings of the previous tests, namely, that climatic conditions, rainfall and soil moisture conditions in northwestern Minnesota were unfavorable for the ground retting of the hemp, and secondly, that the tonnage yield was much less than in the warmer and more humid areas further south.

THE DIVIDENDS OF POTATO RESEARCH TO THE RED RIVER VALLEY

The thousands of dollars spent by the Experiment Stations annually in the potato growing states and other thousands spent by the United States Department of Agriculture for potato research may seem to the consumer a needless expenditure of money, but to the potato grower, he knows that the findings in potato research has saved this essential food product. The "Potato Famines" in Ireland of the last century proved how a single disease (late blight of potatoes), if left uncontrolled, could wipe out a crop which was the mainstay in the diet of a people. The "trial and error" method of research in this important crop began in Ireland where it was discovered that potatoes on the highlands suffered less from the disease than the potatoes on the low humid bog lands. It was not until about the turn of the century that scientists isolated this fungous disease and later found that its growth could be stopped and the disease controlled through the use of a copper sulphate spray called Bordeaux mixture (first used in Bordeaux, France, to control grape diseases)

The coming of the late blight of the potato to our eastern states started what may be called the first phase of potato research, namely, Potato Disease Control Programs. Scientist had to do first the obvious thing—"save the crop". Other diseases of the foliage and tubers demanded attention such as Early Blight, Potato Scab, Rhizoctonia, Black Leg Rot and others. In addition to the copper compounds used wet or dry, to control the leaf diseases, formaldehyde and corrosive sublimate (mercuric chloride), came into use for the control of potato scab and black scurf (rhizoctonia). It was soon found that by heating the formaldehyde and by adding hydrochloric acid to the corrosive sublimate that surface tension was broken on the tuber surface and that the liquid treatments became more effective. Since those pioneering methods of disease control were used, the leading chemical companies, in cooperation with the experiment stations, have perfected many chemicals even more effective in potato disease control work. Concurrently, with development of the spraying program at the turn of the century, came the first phase of the potato variety development program, the fore-runner of the potato breeding program. New varieties came from the selection of promising seedlings grown from seed from potato seed balls. Of a large number of varieties that made their appearance before the turn of the century the Early Ohio, Early Rose, Beauty of Hebron and others of the early and mid-season varieties were most popular in Minnesota with the Early Ohio most popular in the Red River Valley. The Burbank, Rural New Yorker, Carmen No. 1, etc., were good examples of the seedling selections which were late in season.

The second phase in potato research came with the development of the science of genetics, beginning some fifty years ago. This basic research in plant breeding sought potato breeding stocks with resistance to fungous and virus diseases, desirable dates of maturity, good tuber type and skin color. The Minnesota Experiment Station was the first mid-west station to pioneer in potato breeding. The most extensive potato breeding work in the early years was done in the state of Maine. During the past thirty years practically all of the major potato producing states have done extensive work in producing new disease free varieties and strains of potatoes. New varieties of potatoes with varying degrees of resistance to the major diseases have now replaced most of the old standard varieties, the Pontiac has replaced the famous Red River Ohio, and only the Irish Cobbler of the old standards remains on the planting list. New varieties are now being grown for specific uses such as baking, potato chips, French fries, etc. In Europe, special varieties are for industrial uses such as starch and livestock feeding. Starch and potato flour factories in the Red River Valley today are using the new commercial varieties that are grown here, the flour, chip and to some extent, the French fry manufacturers are depending chiefly on the white potato varieties.

The writer started the potato experimental work at the Northwest Experiment Station at Crookston in 1912 and through the years conducted extensive experiments in disease control by spraying and seed treatment, soil preparation, fertilizer tests, and cultural practices, and collaborated with the central Minnesota Station in the potato breeding project. With the identification of new virus and fungus diseases and insect pests, the Experiment Stations have a continuing job for the plant breeders. The importance of the physical and chemical properties of the soils for potato production is being given a new look by the soil specialists.

In addition to the Experiment Stations of North Dakota and Minnesota, the Red River Valley is fortunate in having the Potato Research Center which has headquarters at East Grand Forks. This research center is unique in that it is an institution owned and directed by Red River Valley Potato Growers of North Dakota and Minnesota. A brief description of this research center is included in this history.

Potato Research at the Minnesota Experiment Station began in the Department of Horticulture more than fifty years ago under the direction of Professor A. R. Kohler. As the science of Genetics developed Dr. F. A. Krantz was assigned to the potato breeding work. A site along the North Shore, at Castle Danger was selected where conditions were favorable for the flowering and setting seed of many potato varieties. The potato crossing work was done in the fields until more recent years when the hybridizing was transferred to greenhouses. Upon the death of Dr. Krantz, his successor Dr. Florian T. Lauer and his associate, Dr. O. C. Turnquist, are continuing the work.

THE RED RIVER VALLEY POTATO RESEARCH CENTER AT EAST GRAND FORKS, MINNESOTA

**By Lyle Currie, Secretary
Red River Valley Potato Growers Association**

The Red River Valley Potato Research Center was established in 1948. Owned by the Red River Valley Potato Growers Association, the Research Center, a cooperative effort of the United States Department of Agriculture, University of Minnesota, North Dakota College of Agriculture, and the grower's association, is dedicated to the improvement in the production, handling, storage and marketing of potatoes. Built at a cost of \$150,000.00, the Research Center consists of an office building containing office space, chemistry and cooking laboratories, a large potato storage house and engineering laboratory.

In addition to the Research Center, a 480 acre research farm, located 8 miles southwest of Grand Forks, in North Dakota, is owned by the Association. Here scientists test new varieties, insecticides, fungicides, fertilizers, soil management methods, etc., all toward the production of higher quality potatoes. The farm is also a laboratory on which new equipment and new methods are tested. The farm produces potatoes for use in storage, handling and shipping studies, throughout the winter. The fields provide the ideal place to try out new equipment for planting, harvesting and handling, as well as tests on dusting, spacing, improving maturity, and so forth.

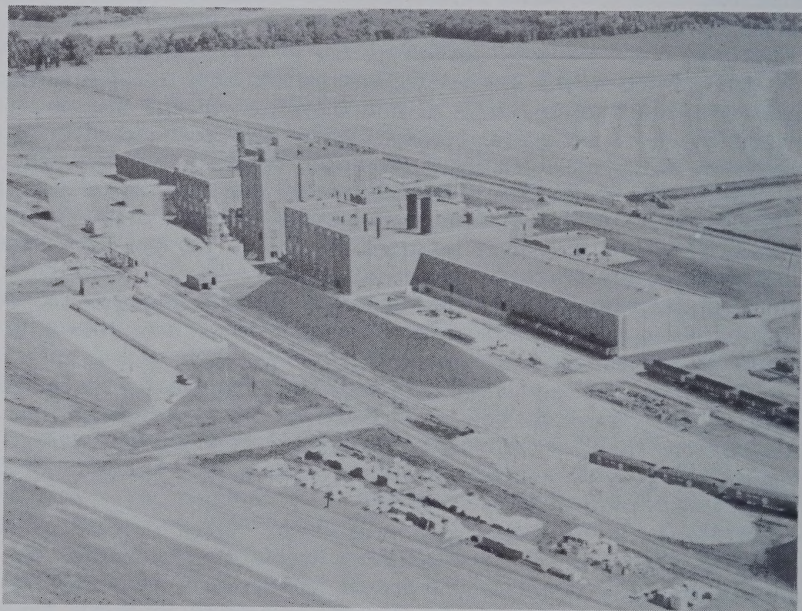
Trials do not end with the storage of a crop as further work may include grading, shipping, cooking tests and processing. All together the Research Center offers the opportunity for testing, all to provide a better product through the elimination of waste and improvement of quality.

U. S. D. A. personnel stationed at the Research Center include Storage and Farm Machinery specialists, Industrial Engineers, Horticulturists, University of Minnesota and North Dakota State University personnel who cooperate in work from their respective stations. The Research Center is also the headquarters of the Red River Valley Growers Association staff.

The Potato Field Day at the Potato Research Farm annually attracts hundreds of potato growers from the Red River Valley of Minnesota and North Dakota. New varieties from all potato Experiment Stations are tested for yield, marketing and processing qualities. Approximately one thousand new seedling selections from the Minnesota and North Dakota Stations are tested annually and are dug for viewing on Field Day. Extensive field tests are made of fertilizers, fungicidal and insecticide materials, seed treating compounds, soil and cultural tests.

SUGAR BEETS AS A CROP IN POLK COUNTY AND THE RED RIVER VALLEY

The fact that the clayey soils of the Fargo and Bearden series, the topography and climate were ideal for sugar beet culture, brought three sugar processing plants to the Red River Valley and established the sugar beet as a major cash crop in the area. With two of the sugar factories in Polk County, one at East Grand Forks, one at Crookston and a third factory at Moorhead, good outlets for the beet crops are provided for the border counties of both Minnesota and North Dakota.



Aerial view of American Crystal Sugar Plant at Crookston with six sugar storage silos in construction 1959-'60.

A brief summary of facts pertaining to the recognition of the economic value and first culture of the sugar beet in this county should be of interest. The fact that sugar produced from the sugar beet was identical to the sugar produced from sugar cane was first proved by German chemist, Andreas Marggraf, in the year 1747. The first attempt to produce beet sugar in North America was at North Hampton, Massachusetts, when 1300 pounds of sugar was produced in 1839. The project failed commercially as did similar small plants which were built in Michigan, Utah and California.

The first successful factory processing sugar beets, however, was established at Alvarado, California in 1879. This plant has been in continuous operation since that time with its moderniza-

tion keeping up with the new inventions and new techniques in the manufacturing process. The four sugar processing plants in Minnesota are units of the American Crystal Sugar Company with headquarters at Denver, Colorado. The first processing plant in the state was built at Chaska, Minnesota in 1906. This factory and a sister factory at Mason City, Iowa processed the first beets grown in the Red River Valley under contract with the company in the early twenties before the East Grand Forks plant opened in 1926. The capacity of the Chaska plant was 1700 tons of beets per day, the larger plant at East Grand Forks had a capacity of 2400 tons, the Moorhead plant opened in 1948 having a capacity of 3400 tons as does the Crookston plant which opened in 1954.

The first reported acreage of sugar beets in Polk County appeared in the United States Census of 1910 when three acres were reported. The first research in sugar beet culture in the area was started by the writer at the Northwest Experiment Station in 1913. The first work consisted of a test of two varieties of seed imported from Germany (that country at that time and for many years later was the chief source of sugar beet seed for



The first mechanized sugar beet cultural implements. The four row cultivators were mostly Model T Fords stripped down with rear system tractor wheels. Photo taken at Fisher in 1932 with John Bingham, manager of the East Grand Forks plant near the center of the picture and prominent pioneer growers of the Fisher area. (Courtesy Espe Machine Co.).

American growers). The yields of beets the first year were 13.3 and 12 tons per acre with a sugar content of 14 per cent. With no near-by outlet for sugar beets until the early twenties, sugar beets had to compete with the higher yielding mangels for livestock feed. Many of the dairymen of German and Holland descent were growing mangels and beets for succulent feed, a practice that ended with the labor shortages during World War I. The

scope of the experimental work with sugar beets at the Northwest Experiment Station was increased beginning in 1917 to include cultural and fertilizer experiments.

During the twenties and early thirties, while the Sugar Companies were relying on imported sugar beet seed, the variety tests at the Experiment Station were discontinued and emphasis was placed on spacing, soil preparation and fertilizer trials. Variety testing was resumed in the early thirties in a cooperative project with the Department of Agronomy, Minnesota Experiment Station and the Office of Sugar Investigations, United States Department of Agriculture when new home-grown strains of sugar beets were tested for sugar content yield and disease resistance. In the late thirties all of the sugar beet testing work in the Minnesota Experiment Station was transferred to the Southeast Experiment Station at Waseca. The American Crystal Sugar Company, which operates the three sugar processing plants in the Red River Valley, has through the years maintained a research staff which has passed on information to the sugar beet growers on the best cultural and fertilizing practices.

During the first few years of operation of the American Crystal Sugar plant at East Grand Forks, practically all of the field culture, including the lifting and much of the hauling of beets was done by horse labor. Some tractors were in use for plowing, discing, harrowing and fallow work.

The physical condition of the heavier soils of the Red River Valley was deteriorating up to the advent of sugar beet culture, through continuous grain cropping and the plowing of the land with horse drawn plows. Plowing of the land at the same depth year after year developed plow soles which prevented an easy flow of water to the sub-soil and retarded the deep penetration of roots of crops. Sub-soiling and deep plowing tests to break up the plow sole were conducted by the writer, in preparation of soil for sugar beets. Deep plowing through the plow sole proved as effective in fall plowing as deep tillage. Today, with deep tillage implements and deep rooted legumes such as alfalfa and sweet clover in rotation, the plow sole is no longer a factor but other problems on the physical condition of the soil need to be solved and such cooperative experimental projects are now in progress.

The yield of sugar beets is dependent on the number, size and quality of beets produced. In the spacing tests the writer found that the greatest yield of beets was obtained on the 14" spacing in the row. With the weed problem in beet fields in the early years of beet culture in the county, growers resorted to cross cultivation on the level fields of the county. Cross cultivation increased the size of beets but did not compensate in yield for the reduced number of beets. The weed problem on fields that have gone through several rotation cycles with sugar beets is now less acute and most growers have discontinued cross cultivation and are relying on closer spacing with so called "long handled thinning and hoeing". New methods of processing sugar beet seed has

reduced the work of thinning to a minimum.

Fertilizer tests, starting back in 1914 at the Northwest Experiment Station, indicated that 100 pounds of 0-20-0 up to 100 lbs. 0-40-0 gave profitable returns on many crops. The use of phosphate fertilizers at the rate of 125 lbs. of 0-16-0 was made a part of the growers contract from the start of operations in the Red River Valley. The good results obtained from the use of 100 to 200 pounds of commercial fertilizers on sugar beets prompted some fertilizer salesmen to recommend much heavier applications, however, cooperative tests starting in 1928 by the Northwest Experiment Station in which varying amounts of phosphate alone and phosphate in combination with nitrogen and potash up to 400 pounds per acre disproved the heavy application theory. With normal rainfall in the Valley the law of diminishing returns applied to the heavy applications of fertilizers. In recent years, with the soil testing service of the Minnesota Experiment Station, beet growers can compute quite accurately the fertilizer needs of his soil and can expect, with normal cultural and climatic conditions, a maximum return from his crop. Tribute should be paid to the American Crystal Sugar Company for its insistence in its contract that soil building practices be followed and that phosphate fertilizers be used by the growers. The sweet clover, green manuring crop and late summer fallow recommended for the sugar beet crop was found to be a good soil building practice for other crops. Soil tests have shown that on many farms nitrogen applied with the phosphate fertilizers may give profitable returns, in such instances a combined fertilizer such as 10-40-0 is used. While the heavier soils of the Valley have a potential supply of potash, yet in many instances small amounts of available potash added to the fertilizer mixture show profitable returns. With the competition between fertilizer manufacturers today, a farmer can secure almost any combination of fertilizing elements he may desire.

Much of the research in sugar beet culture is now being carried on by the sugar companies. With their well equipped laboratories and well trained scientists, they can quickly translate their findings to field operations with the beet growers, the state and federal experiment stations are confining their efforts quite largely to basic research with this crop. It has been found with sugar beets, the same as with other fields crops, that as a crop becomes more widespread in acreage and its culture becomes intensified, disease and insect problems multiply so the problem of the research worker is never ended.

The contributions made by machinery companies, and the inventive ingenuity of farmers themselves in developing planting, cultural and harvesting machinery, should be recognized. The beet growing picture has changed in less than thirty years from the horse drawn 4-row drill and one and two rowlifter with hand piling, topping and loading, to the twelve and sixteen row drills, cultivators and multiple row harvesters and loaders. Where we

once piled, sold or fed the beet tops for livestock feed, the roto-beater puts the tops back in the soil for fertilizer. Mechanical scalp-ers or toppers have now replaced human hands; conveyers and various types of agitators clean the beets, reducing the tare and the dockage to the minimum even in wet soils. The greatest progress in the mechanization of sugar beet culture was made during and following the labor shortages brought about by World War II, with perhaps the greatest advances in the perfection of harvesting machinery being made in the past decade.

Sugar beet culture, with its stability of market outlet and its improvement of farm practices, has been a boon to the agricultural development of the Red River Valley. The perpetuity of the Beet Sugar Industry is dependent upon congressional action in continuing the Sugar Act which keeps in balance the production and importation of cane sugar with beet sugar production. If the beet sugar industry can get its fair share of the consumption of sugar by the increase in population, then an expansion of sugar beet acreage can be expected in the sugar beet producing areas.

Specified Years	Acreage	Tons Per Acre	Price Per Ton (State Av.)	Gov't. Premium Pay't Per Ton
1922	1,407	6.8	\$ 6.50	
1923	2,511	7.4	7.40	
1924	4,012	8.6	7.56	
1925	4,598	9.8	9.32	
1926	10,056	9.1	7.59	
1929	5,257	7.8	7.00	A.A.A.
1933	8,154	9.3	5.02	1.71
1938	9,304	10.0	4.51	Jones Costigan
1943	11,200	8.8	8.47	Sugar Act
1945	13,792	9.5	9.71	Average.
1951	22,712	11.2	11.30	\$2.41
1954	27,773	11.2	10.40	\$2.41
1958	28,100	13.0	11.20†	\$2.41

Years selected for the table show changes in acreage. 1924-1958 State Census.

1922-24 figures from American Crystal Sugar Co.

† 3 years average, 1955-57 included.

* Prices given from state-wide census figures.

In 1920 and 1921, 293 and 273 acres were grown respectively with some beets going to Chippewa Falls, Wis., and part to American Crystal Sugar Co., at Chaska, Minn. Crops from 1922-25 were shipped to American Crystal Sugar plants at Chaska or Mason City, Iowa.

1926— Plant at East Grand Forks began operations.

1954— Plant at Crookston began operations.

Sugar Beet Processing Plants

A great asset to the agricultural economy of the Red River Valley counties of Minnesota and North Dakota is the American Crystal Sugar company with its three large processing plants on the Minnesota side of the Red River. The acreage of beets processed by the three plants in 1958 from the border counties of the two states amounted to 93,379 acres. In the Valley distribution of the sugar beet acreage in 1958, 35,573 acres were allotted to the Moorhead district and 59,806 acres were allotted to the East Grand Forks and Crookston plants. The Crookston and Moorhead plants processed some 400,000 tons of beets at each plant. The smaller plant at East Grand Forks processed 275,000 tons.

The Crookston plant, for example, processed as much as 4500 tons of beets in a record day, with an average of 3900 tons per day for the operating season. This plant produced more than 1,000,000 pounds of sugar in a record day and a total of 1,121,879 one hundred pound bags for the season. The by-products from the sugar processing plants, dry and molasses beet pulp and molasses are of great value to livestock feeders of the area and to the livestock feed industry. The Crookston plant, for example, in 1958 produced 458,649 bags of beet pulp (100 lbs.) each and 19,156 tons of molasses (84 brix).



"Lest we forget" our original horse power. Courtesy Mrs. Herman Miller.

Table

CORN, OATS AND BARLEY PRODUCTION IN POLK COUNTY SINCE 1910
1910 and 1920 U. S. Census: 1922-1958 Minnesota Agricultural Statistics *

Years	Corn			Oats			Barley		
	Acres	Bu. Per A.	Production Bu.	Acres	Bu. Per A.	Production Bu.	Acres	Bu. Per A.	Production Bu.
1910	2,903			96,774	28.4	2,747,228	53,268	22	1,173,509
1920	2,859	28	81,087	115,474	17.3	2,096,379	47,498	13.9	656,225
1922-24	37,066	25	1,042,000	108,269	28.6	3,265,058	49,039	23.8	1,042,000
1925-29	25,640	22.4	602,960	121,360	26.0	3,678,800	65,800	27.8	2,387,240
1930-34	28,260	21.8	643,020	124,650	29.4	3,611,000	87,300	22.6	1,979,740
1935-39	27,680	23.0	690,800	110,080	27.6	3,055,400	109,440	21.0	2,300,120
1940-44	43,000	30.8	1,333,160	105,840	33.8	3,588,520	105,300	25.6	2,627,340
1945-49	32,300	31.4	1,006,840	110,120	33.6	3,739,620	106,280	25.5	3,128,000
1950-54	26,280	33.6	1,094,225	119,280	32.4	3,862,380	158,720	27.8	4,726,480
1955-58	22,560	37.5	1,028,600	142,575	42.7	6,156,275	203,875	28.2	6,181,050

With new improved corn hybrids, yields of ear corn are increasing steadily, bushel yields of 65 to 90 are not uncommon. Restricting wheat acreage from war times high has diverted some land to oats and barley. Barley in 1958 produced an all-time high yield of 7,805,200 bushels from 205,400 acres @ 38 bushels per acre.

Table

WHEAT PRODUCTION IN POLK COUNTY SINCE 1910

1910 and 1920 U. S. Census: 1922-1958 Minnesota Agricultural Statistics *

Spring Wheat				Durum Wheat			Winter Wheat		
Years	Acres	Bu. Per A.	Production Bu.	Acres	Bu. Per A.	Production Bu.	Acres	Bu. Per A.	Production Bu.
1910	164,229	16	2,621,256	0			0		
1920	242,610	9	2,182,067	0			0		
1922							1,364		
1922-24	158,841	14.5	2,305,850	0			1,554	11.5	18,300
1925-29	149,280	12.8	1,885,900	51,100	17	832,100	566	13.4	8,434
1930-34	122,240	15.4	1,890,320	21,240	16.8	365,240	560	16.2	8,940
1935-39	169,100	13.6	2,291,880	23,650	13.6	340,600	740	17.8	12,620
1940-44	134,800	18.8	2,493,800	15,400	17.6	265,560	740	19	13,780
1945-49	161,240	19.1	3,099,940	17,000	17.8	289,360	238	19.8	4,552
1950-54	152,340	17	2,585,520	7,800	9.6	59,820	1,044	17.6	18,780
1954-58	113,125	21.8	2,471,500	13,375	22.5	359,825	2,325	20.2	56,800

* Average yields computed from stated annual county figures.

Low yields of Spring Wheat, 1920-23 due to Black Stem Rust, yields improved with introduction of rust resistant types. Low yields of Durum, 1950-54 due to new strains of rust on Mindum variety; new resistant varieties introduced 1954-58. More than 3,000,000 bushels of spring wheat were produced in each of years: 1924, 1937, 1938, 1944, 1946 and 1949. High yields of spring wheat were attained with the new variety Selkirk 1954-58, with a 35 bushel average in 1958. Polk County was high county in the state for durum production, 1928-45, and in spring wheat, 1949-50-51.

Table

RYE, FLAX AND POTATO PRODUCTION IN POLK COUNTY SINCE 1910
1910 and 1920 U. S. Census: 1922-1958 Minnesota Agricultural Statistics *

Years	Rye			Flax			Potatoes		
	Acres	Bu. Per A.	Production Bu.	Acres	Bu. Per A.	Production Bu.	Acres	Bu. Per A.	Production Bu.
1910	7,707	17.3	133,349	24,500	8.1	198,503	3,900	134.5	524,374
1920	25,681	10.2	263,120	24,726	7.2	178,322	14,605	82.4	1,203,912
1920-24	43,491	14.0	652,110	32,855	8.8	257,194	30,988	91.8	2,856,867
1925-29	9,560	14.4	149,520	46,780	7.6	355,860	22,040	77.6	1,629,760
1930-34	6,240	13.2	82,180	47,200	7.4	330,800	24,160	64.8	1,565,540
1935-39	5,720	13.8	84,080	45,660	7.0	309,860	20,900	93.8	2,000,400
1940-44	3,280	13.8	45,720	53,140	6.4	354,360	27,840	100.0	2,822,540
1945-49	2,440	14.2	34,450	64,760	8.4	537,620	27,660	172.0	4,602,600
1950-54	16,400	14.2	24,360	58,460	8.8	515,380	17,920	202.0	3,849,600
1955-59	3,975	11.8	46,120	45,600	7.8	366,875	21,000	138.2	2,854,250

Polk County—highest in yields and highest in acreage among counties in Minnesota since 1943. 1950 record yield of potatoes—220 bushels per acre, 5,439,000 bushels.

Flax in 1936 yields only 4 bushels per acre, flax wilt most important factor; 1957 only 4.5 bushels per acre, aster yellows.

* Five year averages figured from annual production figures from State-Federal Crop and Livestock Reporting Service.

FIVE YEAR AVERAGE PRICES OF FARM CROPS

Year	Corn bu.	Wheat bu.	Oats bu.	Barley bu.	Rye bu.	Flax bu.	Potatoes bu.	Soy Beans bu.	Hay ton
1909-14	.504	.908	.38	.602	.653	1.658	.528	0	8.12
1915-19	1.09	1.79	.544	.914	1.324	3.044	1.10	0	11.48
1920-24	.612	1.198	.348	.534	.876	2.126	.636	0	9.54
1925-29	.674	1.20	.366	.554	.83	2.24	.944	0	14.66
1930-34	.62	.674	.27	.432	.454	1.436	.46	†1.35	8.48
1935-39	.586	.916	.26	.50	.502	1.65	.648	1.00	5.07
1940-44	.772	1.12	.562	.71	.666	2.27	.926	1.56	7.14
1945-49	1.392	2.02	.73	1.394	1.71	4.47	1.29	2.48	14.66
1950-54	1.50	2.16	.714	1.20	1.40	3.53	1.28	2.57	16.37
1955-58	1.09	2.02	.555	.915	1.05	2.92	1.34	2.08	15.57

Four year period average.

Depression prices:

1932	.28	.44	.13	.22	.29	.91	.23	0	5.20
------	-----	-----	-----	-----	-----	-----	-----	---	------

†First report on soy beans, 1934.

LIVESTOCK PRODUCTION, TABLES, PRICES AND TRENDS

Table

POLK COUNTY LIVESTOCK NUMBERS — 1910-1958*

Year	Horses & Mules Number	All Cattle Number	Milk Cows & Heifers Number	All Swine Number	All Sheep Number
1910	19,257	53,491	24,650	11,705	11,176
1920	27,610	54,282	43,397	16,854	14,030
1925-29	22,900	52,780	28,560	27,320	20,900
1930-34	21,400	65,200	34,400	18,120	40,760
1935-39	17,720	66,100	35,300	14,200	35,980
1940-44	12,660	73,800	36,700	23,700	41,040
1945-49	8,000	64,700	28,340	17,720	25,040
1950-54	3,640	57,400	23,350	13,080	14,080
1955-58	2,117†	55,880	21,240	14,020	14,180
1959	1,167	50,499	31,020	23,201	34,391

*1910-1920, U. S. census figures: 1925-1958 averages figured from annual State-Federal Crop and Livestock Reporting Service Reports.

†2,117 horses, ponies in 1955—an additional decrease of 17 per cent noted for 1958. 1940-1944 best all-round period for livestock numbers except horses. The largest reported number of mules was 437 in 1920—numbers declining after that period.

Table

LIVESTOCK PRICES***5 Year Averages for State of Minnesota**

Year	Horses* Per Head	All Cattle Cwt.	Dairy Cows Per Head	Swine Cwt.	Sheep Cwt.	Lambs Cwt.
1910-14	\$119.00	\$ 4.75	\$ 47.74	\$ 7.17	\$3.92	\$ 5.61
1915-19	107.40	7.27	73.49	12.31	7.48	10.61
1920-24	81.60	5.50	58.64	8.44	5.71	9.96
1925-29	79.20	7.52	77.20	9.82	6.58	11.90
1930-34	67.00	4.82	44.20	4.93	2.70	5.86
1935-39	91.80	6.54	58.40	8.20	3.66	8.16
1940-44	73.80	9.36	92.40	10.78	4.52	11.16
1945-49	51.20	16.72	157.40	19.10	7.32	19.04
1950-54	51.40	21.66	225.00	19.34	9.24	24.05
1955-58	75.50	17.18	180.50	13.14	5.76	19.65

*The prices of horses listed at their 5 year average inventory value. All 5 year average prices taken from "Minnesota Agriculture Prices—1858-1959, a June 1959 Bulletin from Minnesota State-Federal Crop and Livestock Reporting Service.

1930-34 figures cover the depression period: Beef cattle low of \$2.90; Dec., '33, milk cows, \$31.00; Hogs, \$2.50; Sheep, \$1.40, Oct. '32; Lambs, \$4.50, Dec. '32.

LIVESTOCK FED FOR MARKET

Polk County has never been known as a "feed-lot" county for producing market cattle, sheep and hogs although surplus animals from the flocks and herds of the county have been sold for slaughter since pioneer days. While many farmers scattered throughout the county have on occasion fattened steers, hogs and lambs in sizeable numbers, it was not until the early forties that feed lots became a common sight. The livestock feeders, with their eyes on the corn feed-lots of southern Minnesota and Iowa, very largely ignored the two great surplus feed crops of the county, barley and potatoes, until the early forties. The government price support program on potatoes released cull and No. 2 potatoes practically free for livestock feeding.

Pioneer work in the feeding of potatoes to cattle done at the Northwest Experiment Station attracted nation-wide attention as to the value of potatoes in a feeding ration. Since that time, new varieties of corn of early maturity, corn driers to dry the corn in off years, pelleting of barley, pit and other silos have furnished all of the essentials for the successful feeding of cattle, sheep and swine in sizeable numbers. Feed lots are scattered throughout the county, the greatest concentration of feeding yards, however, occurs in the west half of the area. The short term feeding of lambs, cattle and hogs fits in well with the grain crop farms.

Taking a sample year from recent census reports we found that in 1955 in Polk County, 2,390 cattle, 3,882 sheep and lambs were fed for market and 2,772 sows were held for spring farrowing.

DAIRYING — AN IMPORTANT PHASE OF THE FARMING ENTERPRISE IN POLK COUNTY

The dairy cow was one of the indispensable farm animals brought into the county by the early settlers. Practically every farm had enough dairy cows to be self-sufficient for all their dairy product needs. While the farms of the prairie section were better adapted to grain farming, yet the small dairy herd furnished an income throughout the year in addition to supplying the family with essential food products. Eastern Polk County, with abundance of water, shelter and rich pasture grasses, has been better adapted to dairy farming than the open prairie section.

Farm surpluses of agricultural products has always been a problem in a rich agricultural county like Polk. The surplus problem with milk and cream became acute in the early 1900's. Unethical practices by centralizer creameries at the cream buying stations throughout the county hastened the organization of co-operative creameries throughout the county and brought about the organization of the Red River Valley Dairymens Association in 1903. Baggage truck loads of cream cans were a common sight at every railroad station. Cream station buyers and railway express men considered dairying in those early years an "exploding industry" because of the hot weather explosion of cream cans.

The lid hazard, from the cream cans, brought about a law required cream can lids to be fastened to the cans by a bale link. Luckily or unfortunately, the too-ripe cream was shipped out of the county and the fresher and better quality cream went to the local cooperative creameries. The local cooperative creamery manager, acting independently for his patrons, soon found that the cooperative creameries were bidding against each other on the butter market. They, however, in the early twenties cooperated in a selling agency which later became the Land-O-Lakes Creameries, Inc., world's largest cooperative creamery organization.

To note the growth of the dairy development of Polk County, U. S. Census figures taken from random years, beginning with the year 1910 will give at least a progress report showing the trend in the dairying industry. The 1910 census reports show that Polk County had 24,650 dairy cows and heifers two years old or older. The reported milk production was 8,039,937 gallons. The disposition figures show that 338,420 gallons of milk and 127,235 gallons of cream were sold, 1,272,339 pounds of butter were made on the farms of which 665,911 pounds were sold. The 1920 figures show that record number of cows and heifers (43,397), a production of 8,288,733 gallons of milk, 527,247 gallons of which were sold; 1,307,326 pounds of butter fat, 877,030 pounds of butter made on the farms, 217,122 pounds of butter and 94,332 gallons of cream were sold. In 1934 there were 39,000 milk cows and heifers two years and over; 15,293,264 gallons of milk were produced and only 48,437 pounds of butter were produced on the farms — the rest of the dairy products went mainly in commercial channels. In 1945 there were 33,000 milk cows and heifers two years old and older with a milk production of 32,011,883 gallons and a production of 3,087,043 lbs. of butterfat. In 1950, 25,000 cows produced 42,404,602 gals. of milk and 1,847,561 lbs. of butterfat.

The sampling of figures of dairy production clarify the picture of the changes which have been taking place in dairy production and some of the changes in the processing of the dairy products within the county. The most noticeable change in dairying has been made in the churning of butter. Until cooperative marketing and cream grading laws were enacted, farmers wives found it profitable to churn their own butter. With the growth of the creameries, however, dairy (homechurned) butter which dominated the local markets in the early years, was replaced by creamery butter. Following the depression years in the late thirties the so-called dairy butter was seldom seen on the markets. Dairy farmers today generally prefer to sell their butter-fat and buy back creamery butter. There have been changes in the creameries and processing plants in the county during the past fifty years. Roy A. Bodin, Agricultural Statistician for the State-Federal Crop and Livestock Reporting Service, St. Paul, Minnesota tells of the changes in a letter of January 29, 1960. He states in part: "These data were a part of the information supplied by local creameries. For 1913, the record shows 20 creameries in operation with a total

of 2,231 patrons who reported 16,759 cows. These creameries reported 33,644 pounds of milk received and 6,614,820 pounds of cream. Total butterfat received in milk and cream was reported at 1,714,317 pounds. These creameries reported the production of 2,087,163 pounds of butter. The average price patrons by pound of butterfat was 30.3 cents and patrons were paid \$520,277. The number of creameries and milk processing plants operating in 1958 is 13, of which 12 received milk, cream or both from farmers and all of them did some processing."

The change from marketing cream and the use of the cream separator on the farm came quite rapidly at the advent of World War II when processed milk was required for the armed forces. To meet this demand for dried skim milk, a number of drying plants were erected to serve the Red River Valley. The one drying plant in Polk County was erected at Fosston in 1944 and put in operation in 1945. Mr. John Dysart, Director of Public Relations, Land-O-Lakes Creameries, Inc., gave me the following information regarding the Fosston plant: "It is a large centralized milk plant and has received milk from the cooperative creameries in that area since its erection. In addition to the skim milk which comes in direct, we haul much wholemilk into Fosston where we have a contract with the Fosston creamery to churn for us, and the skim milk comes to the milk plant where it is manufactured into milk powder. Powder production has gone from 3,422,400 pounds in 1945 to 8,947,100 pounds in 1958. When the plant was first opened 400 to 600 pounds of powder per hour was a good rate of production. Now, through putting in more modern equipment, plants such as this are able to manufacture from 1600 to 2100 pounds of powder per hour. Over the years these milk plants have returned to the patrons considerable sums of money."

Other apparent changes in the dairying picture during the past fifty years has been the great increase in production per cow, 24,650 cows in 1910 produced 8,039,937 gallons of milk while in 1950 25,000 cows produced 42,404,602 gallons of milk. Along with the increase in production of milk per cow have come modern sanitation methods for handling and cooling the milk on the farms and the modern stainless steel tanks and bulk pick up deliveries of milk to the processing plants. Through constant vigilance, tuberculosis and brucellosis have been eradicated from the dairy herds of the county. Improved cooling and refrigerated tank trucks eliminate the necessity of milk being consumed within a few miles of the point of origin. There is a noticeable shift of dairy cattle numbers from west to east Polk County. County Agricultural Agent, Mr. Harley Shurson, of East Polk County, in checking over dairy cattle statistics for the county, points out that in 1947 55 per cent of the dairy cattle were in east Polk and in 1957 the percentage had increased to 67 per cent.

Milk drinking habits of people are changing. Since World War II more people are drinking milk. The use of skim milk and skim milk powder has increased greatly in recent years.

THE NUMBER AND SIZES OF FARMS IN POLK COUNTY — 1910-1958

It is quite impossible to make direct comparisons in the number of farms of the different farm acreages through the years due to the changes in base acreages used by the census bureaus through the various census reports. The U.S. Census Reports, however, do give valuable data that can be used directly such as, number of farms, percentage of land in farms, average size of farms. Even though the acreage listings of the various sized farms vary in the census reporting, certain general conclusions can be drawn which indicate trends in farm sizes.

The total land area of Polk County, 1,979 square miles, makes a total land acreage of 1,226,560 acres. In 1910 only 72.3 per cent or 888,852 acres were in the 3,525 farms of the county. By 1920, 1,069,153 acres or 84.4 per cent of the county was in the 4,200 farms of that year. In 1920, 15.5 per cent of the farms were under 100 acres in size and such farms occupied only 3.2 per cent of the land in farms. In 1950, 36 per cent of the farms were 100 acres or less, they occupied, however, only 6.2 per cent of the area in farms that year.

During the period of 1944 to 1958, the number of farms up to 100 and 200 acres began to decrease, as the size of farms increased and the number of farms decreased. Beginning with and immediately following World War II, through the use of mechanized equipment, such as bulldozers, additional crop land was put in cultivation and also the total area in farm lands increased up to 1,190,523 acres.

The average size of farms increased from the 254 acres in 1920 to 302.2 acres in 1950 and 352.3 acres in 1954. The number of farmers operating 1,000 acres or more increased from the 27 "Bonanza Farms" of the early 1900's to 83 in 1940, 90 in 1948 and 115 in 1950. The glamour of the "Bonanza Farms" of the period, 1900-1915, with its fifteen to thirty teams of horses, its horse-drawn equipment, has been lost in the mechanized 1950's. With the passing of the horse-drawn binders, shock threshing, threshing rings, steam threshers, has also gone, in part at least, a spirit of community cooperation which helped enrich farm living, the grass roots of democracy.

The trend in sizes of farms appears to be toward the more efficient units whereby maximum efficiency and the longest period of service can be had from the high priced mechanized equipment. The 1950's mark the period of changes and readjustments for the farming enterprise. Our concepts of farm buildings has changed from the costly weather-tight barns, ornate barn equipment, to the loafing barn for the dairy cows, efficient farrowing house for the brood sows and the elimination entirely of the horse barn. The loafing barn, milking parlor, the cooling tank

and modern milk handling equipment does not spell doom for the dairy farmer but a re-adjustment of overhead expense—the putting of the money that went into the high priced barn into sanitary equipment for handling milk and the year around use for some of the high priced mechanized equipment already on the farm. Re-adjustments must be made in handling other kinds of livestock and poultry whereby maximum efficiency can be obtained in order to compete for markets for our products.

In crops, with decreasing prices in prospect, farmers of Polk County are already meeting the challenge by the intelligent use of fertilizers, weed control, growing better varieties of crops, better grading of products and selling what the market demands.

Intregation in the future may play a small part in the production of wealth in Polk County but the competence and independence of the Polk County farmer insures his place in the agricultural economy of our nation for a long time to come.

Table
INCOME FROM POLK COUNTY FARMS INTO 1950

Income from All Farms (3,876)		Income from Commercial Farms (3,589)		
Income	No. of Farms	Class	Income	No. of Farms
No Sales	25	I	\$25,000 or More	110
\$1.00 to \$249	73	II	\$10,000 to 24,999	432
\$250 to \$399	55	III	\$5,000 to \$9,999	747
\$400 to \$599	64	IV	\$2,500 to \$4,999	1,230
\$600 to \$999	263	V	\$1,200 to \$2,499	710
\$1,000 to \$1,499	287	VI	\$ 250 to \$1,199	360
\$1,500 to \$2,409	585			
\$2,500 to \$3,999	781			3,589
\$4,000 to \$5,999	759			
\$6,000 to \$9,999	437			
\$10,000 \$or Over	547			
3,876				

Crookston is the financial center of Polk County. Its three banks, the First National, Polk County State and Crookston National, have assets totalling more than \$16,000,000.00. The largest individual bank in the county is the First National of East Grand Forks, organized in 1929 with some \$7,000,000.00 in assets. The First National and Polk County State banks of Crookston follow with each bank having assets of some \$6,500,000.00.

The oldest bank in the county is the First National of Crookston organized in September 1881, which has been in continuous operation since that date.

GOVERNMENT AGRICULTURAL PRODUCTION CONTROL AND SOIL CONSERVATION PROGRAMS IN POLK COUNTY 1933-1960

The various Crop Production Control and Soil Conservation programs set up by Federal agencies in Polk County have been directed by officers elected by the farmer participants. While the names of the Federal Assistance programs have changed through the years, the work of the county agencies administering the programs has been continuous. The only change in the county organization plan of administering the programs occurred in 1935 when the area covered by the East Polk County Extension service was transferred to the McIntosh office, farmers elected officers from their area.

Only a brief report on officers of the county organizations and a chronological listing of programs is pertinent to this report.

Chairmen Crookston Office: John Rohrer, 1933-'36; Wilbur Durbahn, 1937; Otto Will, 1938-'53; Adolph Geise, May 1954 to date. Treasurer: Mabel Berget, 1933 to date. Office Manager: J. L. Highness, '60.

Names of government agencies administering the programs: 1933-1948, Agricultural Adjustment Administration (AAA); 1949-1951, Production Marketing Administration (PMA); 1952 to date, East and West Polk County Agricultural Stabilization and County Conservation Committees.

Dates of inauguration of additional programs: 1937 Sugar Beet Program with tonnage payments to growers 'Self Supporting'; 1937-38, Commodity Loans to producers; 1939, Crop Insurance; 1941, Wheat Marketing quotas established; 1942, Wheat Marketing Quotas discontinued during World War II; 1949, Facility Loan Program.

Grain storage program, West Polk County: 1940, Central storage; 1954 New storage, eight bin sites with a storage capacity of 1, 422,380 bushels.

Grain held on loan in farm storage in West Polk County in 1956: barley, 2,399,312 bu.; flax, 7,949 bu.; soy beans, 6,876 bu.; wheat, 1,084,386 bu.; rye, 30,406 bu.; oats, 1,577,397 bu. for a total bushels in storage of 6,538,850 bushels.

Warehouse loans in 1956: barley, \$316,462.07; wheat, \$588,-561.49; soy beans, \$5,593.23; oats, \$67,266.00; flax \$38,268.21; rye, \$2,372.38 with a total of \$1,019,524.38.

Soil Bank program inaugurated in 1956, during that year 36,876.2 acres went into the Soil Bank Program (11% of total crop land.)

In 1958 a total of 2,543,168 bushels of grain was resealed in storage.

East Polk County Agricultural Stabilization and Conservation Committee established as Agricultural Adjustment Administration

office for East Polk County in 1935 and has served that area in all governmental programs dealing with agriculture since that date.

Officers of the East Polk committee: Chairman, Richard Reiersen, Fosston 1935-1953; Oris Moen, Fertile, 1954-1955; Carl E. Siverson, Fosston, 1956 to date. Office Manager: Richard Reiersen, 1954 to date; Treasurer: Ida Nystul, McIntosh, 1938-1955; Albert O. Hestekind, McIntosh, 1955 to date.

Grain storage: three bin sites, storage capacity 438,750 bu. Grain held in storage on loans, 1956, on farms 650,299 bu.; in public or government bins, 40,414 bu.; re-sealed in 1957, 173,089 bu.; First land put in Soil Bank, 1956. Total acres in Soil Bank in 1960, 51,535 acres or 19.3% of crop land.

*Data furnished by chairmen and office managers of the county committees.

